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CONTENTS.

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT.

THE RELATION of Heart Disease and Pregnancy. By Sir JAMES MACKENZIE, M.D., F.R.S., Director of St. Andrews Clinical Institute.—In Four Sections—Section III.—(*Illustrated*) 1281

LETTSOMIAN LECTURES (Abridged) on Surgery of the Lung and Pleura. Delivered at the Medical Society of London on Feb. 7th and 21st, 1921, by G. E. GASK, C.M.G., D.S.O., F.R.C.S., Surgeon and Director of Surgical Unit, St. Bartholomew's Hospital.—Lecture III. The Present Position of Surgery with reference to Diseases of the Thorax..... 1286

ORIGINAL ARTICLES.

The Operation of Ventrofixation, with the After-results of 220 Cases. By J. E. GEMMELL, M.B., F.R.S., and A. LEYLAND ROBINSON, M.D., F.R.C.S..... 1291

The Treatment of Urinary Incontinence by Electrical Methods. By F. HERNAMAN-JOHNSON, M.D., D.M.R.&E. 1295

Squint: The Question of Early Operation. By W. B. INGLIS POLLOCK, F.R.F.P.S..... 1296

The Treatment of Cases of Syphilis having a Persistent Positive Wassermann Reaction. By C. F. MARSHALL, M.D., M.Sc., F.R.C.S., and A. G. SHERA, M.D., B.Ch., M.R.C.S..... 1299

The Creative Force as a Factor in the Economic Problems of Women's Work. By Prof. A. LOUISE MCILROY, D.Sc., M.D..... 1337

CLINICAL NOTES:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

An Unusual Case of a Foreign Body in the Œsophagus for Nine Months. By CHARLES H. CARROLL, M.R.C.S., L.R.C.P.—(*Illustrated*)..... 1300

A Case of Locked Twins. By DENIS V. MURPHY, M.B., B.Ch. N.U.I.—(*Illustrated*) 1300

Case of Aluminium Poisoning. By JOHN SPOFFORTH, L.R.C.P., M.R.C.S..... 1301

A Case of Recklinghausen's Disease. By F. MCG. LOUGHNANE, F.R.C.S.—(*Illustrated*)..... 1301

MEDICAL SOCIETIES.

Royal Society of Medicine: Section of Laryngology: Complete Tonsillectomy as a Routine Operation.. 1302

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The Rhythmic Dance-Book. By Margaret Einert..... 1309

REPORTS AND ANALYTICAL RECORDS.

Ethanesal..... 1309

Tubercle Vaccine R..... 1309

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THE REPORT OF LORD CAVE'S COMMITTEE..... 1311

TREATMENT OF WHOOPING-COUGH..... 1311

PANEL PRESCRIBING..... 1321

ANNOTATIONS.

The Theory of Relativity..... 1313

Pneumonia in the U.S. Army during 1917-18..... 1314

Ionisation Methods of X Ray Measurement..... 1314

Molluscum Conjunctivitis..... 1315

Industry and Contentment.. 1315

Threadworms and Appendicitis..... 1316

The Indiarubber-ball Cough Sound..... 1316

The Nervous Response to Stimulation..... 1317

The Schick Test and Natural Diphtheria Antitoxins..... 1317

An Institute of Applied Medicine..... 1318

Tuberculous Antigens in Urine..... 1318

Security of Tenure for M.O.H.'s..... 1318

The Broncho-pneumonia of Old Persons..... 1319

The Dry Metropolis..... 1319

Public Health at the Labour Conference..... 1319

Health of Troops in the Palestine Campaign..... 1320

SPECIAL ARTICLES.

The Position of the Voluntary Hospitals. Report of Lord Cave's Committee..... 1320

Medicine and the Law..... 1321

Control of Venereal Disease: The Red Cross Regional Conference..... 1322

Extension of Medical Services: Initiation of a County Scheme.—(*Illustrated*)..... 1322

The Clinical Unit in Obstetrics and Gynæcology at the Royal Free Hospital.... 1324

Budapest..... 1325

PUBLIC HEALTH SERVICES.

L.C.C. Estimates..... 1324

School Medical Inspection... 1324

OBITUARY.

John Matthew Fortescue-Brickdale, M.D., B.Ch., M.R.C.P..... 1326

CORRESPONDENCE.

The Sale of Disinfectants (Prof. Henry Kenwood)..... 1327

Chronic Tropical Ulceration in Europeans (Dr. B. E. Edge)..... 1327

The Treatment of Diabetes (Dr. Ph. Horowitz)..... 1327

The Federation of Medical and Allied Societies (Dr. E. Rowland Fothergill)..... 1327

The Danger of Athletics for Girls (Dr. Margaret G. Thackrah)..... 1328

The Value of Sanatorium Treatment (Dr. F. G. Caley) 1328

Digitalis and the Peripheral Circulation (Dr. I. Harris) 1328

The Inheritance of Asthma (Dr. Walter Kidd)..... 1329

A Developmental Anomaly (Prof. J. Ernest Frazer)..... 1329

A Disclaimer (Dr. Charles Russ)..... 1329

An Impostor..... 1329

MEDICAL NEWS.

University of Cambridge..... 1329

University of Oxford..... 1329

University of Manchester.... 1329

University of Bristol..... 1329

Royal College of Surgeons of England: Diploma of Fellow granted..... 1329

Royal Faculty of Physicians and Surgeons, Glasgow..... 1330

Royal College of Surgeons in Ireland..... 1330

Conference on Infant Welfare..... 1330

Royal Sanitary Institute..... 1330

London Dermatological Soc. 1331

Donations and Bequests..... 1331

International Union against Tuberculosis..... 1331

Society of Medical Officers of Health..... 1331

National Council for Combating Venereal Diseases.. 1331

College of Nursing, Birmingham..... 1331

General Hospital, Birmingham..... 1331

Royal Earlswood Institution 1335

PARLIAMENTARY INTELLIGENCE.

House of Commons: Medical Services in the Navy.—Grants to University Colleges.—Insurance Benefit in Hospital.—Coroners (Remuneration) Bill.—Dentists Bill..... 1332

THE SERVICES.

Officers' Alternative Pensions..... 1334

Royal Naval Medical Service 1334

Royal Army Medical Corps.. 1334

Indian Medical Service..... 1334

NOTES, SHORT COMMENTS, &c

Colonial Health Reports..... 1333

An Amphibious Boat-train... 1333

A Quick Replacement..... 1338

The Fremlin-Rogers (Steam) Hygieniser.—(*Illustrated*) 1338

Appointments.—Vacancies... 1335

Births, Marriages, and Deaths..... 1335

Books, &c., received..... 1335

Medical Diary..... 1336

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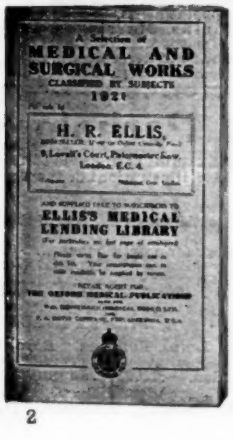

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MURMURS.

Misconception of the Significance of Murmurs.

I RECOGNISE at the outset that in dealing with murmurs I have to overcome a great number of erroneous notions held by the medical profession with conviction. The idea that a perfectly sound heart may show a murmur is so surprising to many doctors that they cannot accept it. Their view seems to be that if murmurs are not organic they are functional and imply debility or some other condition of weakness. That a murmur may be as physiological as a pure sound is altogether outside the limits of this faith. I know that some doctors are ready to admit that some murmurs may be without significance; but nowhere have I found a description which makes clear the exact difference between murmurs of serious significance and those which are innocent. It is on this ground that teachers have failed to enlighten their students. They hedge so much in their descriptions that their pupils go forth with vague ideas and consider it wiser and safer when in practice to view all murmurs with suspicion. I speak of this from a wide experience derived not only by seeing individuals to whose murmurs an unnecessarily grave significance has been attached, but also by questioning doctors as to their views.

In no field of medicine, so far as I know, has this attitude towards murmurs proved so disastrous as in pregnancy. The detection of an innocent murmur has often supplied a reason for forbidding pregnancy or even marriage. Indeed, when I ponder on this subject I am sometimes inclined to think that the discovery of auscultation has actually done more harm than good to the practice of medicine.

It is necessary, if we are to make any progress at all, to understand wherein lies the danger associated with murmurs. Most murmurs seem to arise at the valve orifices of the heart. It has been demonstrated that certain damaged valves give rise to abnormal sounds, and it is evident from the appearance of the valves post mortem that the flow of blood must have been hindered on passing through the orifice or that the valves, being incompetent, have allowed blood to escape backwards. In this way the work of the heart muscle has been hampered. An additional burden being thus thrown upon his heart, a man leading his usual life puts a greater strain on this organ than it is fit to bear. Thus it is only a matter of time until the muscle becomes exhausted and heart failure sets in. But there are murmurs which do not indicate damaged valves, or valves damaged to such a degree as to cause embarrassment to the heart, and it is necessary to distinguish between these murmurs and those which indicate valve damage which embarrasses the heart.

Physiological Murmurs.

Physiological murmurs are always systolic in time, and it is impossible to tell the origin of the greater number of them. They may be loudest at the apex or at the base, or at mid-sternum; they may vary with respiration or posture; sometimes they are heard when the patient is lying and disappear when he stands up; again, they may be present on standing and disappear on lying down. Much time has been spent in speculation on their causes, and fanciful names have been bestowed upon them. From the point of view of the heart's efficiency they are negligible. They indicate neither disease nor impairment, and do not foreshadow the oncoming of any heart trouble. I make this statement as wide a one as possible, for I have watched great numbers of people at all ages—the young growing into manhood and womanhood, leading strenuous lives, and in the case of the women bearing children—yet in no case have I seen any harm result from the fact that their doctor ignored these systolic murmurs. Moreover, there is not to be found in the whole literature of medicine, so far as I am aware—and I have diligently sought for such evidence—a record of a single case of an individual, man or woman, who suffered from heart failure of which a systolic murmur was the only symptom.

Functional Murmurs.

Functional murmurs are usually assumed to be due to dilatation of the heart; the orifices of the valves are supposed to be rendered so wide that the valves fail to close them. This is not entirely correct, for while it is true that we may find a murmur with dilatation of the heart, we may often find great dilatation without a murmur. Further, murmurs come and go when there is no perceptible change in the size of the heart; they may, for example, appear only when the organ is excited or when the patient stands up, and may disappear when the heart quiets down or the individual is at rest. Again, murmurs which we find when the heart is acting quietly, with the body at rest, may disappear on exertion or excitement.

From this it can be inferred that there is some special mechanism, apart from that involved in the dilatation of auricle and ventricle as a whole, which is capable of producing a murmur. This obscure mechanism varies in its efficiency according to circumstances which we are still unable to appreciate. The importance of this is most clearly seen in connexion with the hearts of young people, in whom it is probable that the organ has a peculiar power, which is gradually lost in later life, of adapting itself. It must be remembered also that free regurgitation can take place at the mitral and tricuspid orifices without producing any murmurs. We frequently get evidence of marked tricuspid regurgitation in the veins of the neck and in the liver, yet cannot detect a tricuspid murmur when we come to listen to the patient's heart.

Systolic Murmurs and Heart Failure.

These systolic murmurs, whether functional or organic, are thus supposed to be originated by an escape of blood back from the contracting chamber. This is called regurgitation and has, as we have seen, been assumed to be the chief factor in the production of heart failure. From the theoretical study of it has arisen the "back-pressure" view of heart failure.

There are, however, no accurate data regarding the quantity of regurgitant blood necessary to produce a murmur; and so we are forced to estimate this amount by indirect methods. I have been able to keep under observation, for 20 or 30 years, individuals with loud, rasping, systolic, mitral murmurs, who gave a history of rheumatic fever, and so permitted me to conclude that the murmurs were due to some damage of the mitral valves. These patients never suffered from heart failure. I venture, therefore, the conclusion that, in them, the leak at the valve was small and the damage slight. One may thus say that within certain limits, and in respect of mitral murmurs due to damaged valves, the smaller the leak the louder will be the murmur. In the case of functional murmurs, the leak, if there be a leak, is so slight that it never, except in cases where there exists grave damage to the heart muscle, embarrasses the auricles in their work. The small quantity of blood thrown back does not alter appreciably the size of the auricles, for we often find murmurs in hearts of the normal size.

Differentiation of Functional from Organic Murmurs.

It is not always easy to distinguish between functional and organic murmurs. As a rule functional murmurs are systolic in time and are heard with equal clearness over different parts of the heart. They are usually soft and blowing. But these characteristics do not distinguish them from some organic murmurs. Indeed, though much has been written, and though many attempts at exact differentiation have been made, it remains true that even the most seemingly characteristic organic murmurs resemble functional murmurs so closely that it is not possible in all cases to arrive at certainty. A very rough murmur, especially if accompanied by a purring tremor or a musical note, is indicative of a valve lesion. In the early stages of an endocarditis, however, the murmur is usually soft and blowing, and so presents "functional" characteristics.

To distinguish between these two murmurs the whole circumstances of the case must be considered. In the first place, it is necessary to bear in mind that a murmur may be a normal event. When we find a systolic murmur occurring in an individual in robust health who reveals no other cardiac sign, such as a thrill or an increase in the size of the heart, we may consider the murmur as indicative neither of impairment nor of disease. When we find a murmur occurring in a debilitated person, we should avoid arriving at any conclusion until a search has been made for conditions which may account for the debility. Examples of such conditions are anæmia, imperfect nourishment, insufficient rest, and disease of other organs. It is of great importance, too, to place in their true perspective murmurs occurring in febrile cases, or after the subsidence of an acute febrile attack such as rheumatic fever. The question in these instances is whether the heart has been affected by the disease process. It is always necessary to bear in mind that the raised temperature or the toxins of the illness may produce changes in the heart's action as opposed to changes in its structure, and so may give rise to murmurs and even dilatation which have no organic basis in the strict sense. During the febrile stage of an acute illness, therefore, judgment should be suspended. It should remain in suspense until definite signs of an organic lesion are forthcoming. After a febrile attack a murmur which has arisen during the attack may be observed to persist, or again a murmur may arise at this time de novo. In these cases the other signs and symptoms present must be observed and weighed duly before conclusions are reached. Thus if, after the subsidence of the fever, the rate of the heart becomes slow and the respiratory type of irregularity develops, it may be assumed that the heart has escaped infection and that the murmur is functional. If, on the other hand, the rate is persistently increased, fear may be justified that the heart has become infected, and that active changes are going on.

Significance of Systolic Murmurs.

Since it is true that individuals with systolic murmurs may be in perfect health, may be leading strenuous lives, and may never show any sign of heart failure, we are entitled to conclude that these murmurs may be a physiological and normal sign, and indicate no impairment of the organ's efficiency, nor foreshadow the oncoming of its failure.

I wish to insist upon this, and I base my insistence on the fact which I have already stated, that I have watched numbers of healthy young people, who exhibited such murmurs, grow up into manhood and womanhood, lead healthy and vigorous lives, and never show the slightest sign of heart failure. We know so little of the causation of murmurs that we have small justification indeed for treating them as abnormalities. Even if they are due to regurgitation, it is quite conceivable that this regurgitation may be consistent with a good functioning heart. I have already pointed out that the fear of regurgitation has attained the dimensions of a bogy in the medical mind; further, I have pointed out that, even in cases of organic disease, the amount of regurgitation necessary to produce a murmur is probably very slight. Again, functional murmurs may be present in debilitated individuals; in these cases the murmur is not necessarily an indication of disease or impairment of the heart. Nor is the valve incompetency which its presence indicates the cause of the debility. Manifestly, a murmur is thus but one of many symptoms which an individual may exhibit. Sound diagnosis demands therefore a search for other evidences and signs which may throw light on the fundamental cause of the debility. I do not deny, in saying this, that a systolic murmur may be present in cases of grave heart failure, but I do urge that in these, as in all other cases, it is but an associated symptom. The valvular incompetence is not the cause of the heart failure; it is merely one of the changes which have arisen in consequence of impaired functional efficiency of the heart muscle.

Significance of Organic Murmurs.

I feel that I cannot emphasise this truth sufficiently. That organic murmurs have a varied significance is true, and that they are associated with heart failure is not in dispute; I am nevertheless convinced that the valve lesions which they indicate are in most instances not the cause of the failure. We cannot afford to forget in this respect that individuals with murmurs due to damaged valves caused by some infective disease, such as rheumatic fever, may lead vigorous lives, and in strenuous occupations, without any sign of heart failure.

We conclude, then, that valve lesions in themselves may not necessarily be of serious significance. As, however, murmurs are often associated with heart failure, the presence of organic murmurs would give rise in our minds to the following considerations:

(1) Whether we have here an indication that the heart has been invaded by a disease process;

(2) Whether the damage done by the disease process is stationary or is slowly progressive;

(3) Whether the disease process has affected and impaired the heart muscle as well as the endocardium; and

(4) Whether the damage to the valve is such that it obstructs the work of the heart and so embarrasses the muscle and impairs its efficiency.

In acute illnesses, as we have suggested, it will not be possible to answer these questions, for there the immediate consideration is the infection itself. In chronic cases—that is to say, cases described as chronic valvular disease—it is absolutely necessary that these questions should be considered and answered if a rational conclusion is to be reached. The method of obtaining the knowledge necessary to answer them will be described in connexion with the different valve lesions.

To sum up: estimation of the significance of murmurs, as of all other signs, should be based not on the murmur itself, but on the functional efficiency of the heart, and on the presence or absence of additional symptoms of cardiac mischief (size, rate, and rhythm). If we find in a heart of normal size and rhythm (or with the respiratory type of irregularity) a systolic murmur unaccompanied by evidence of cardiac inefficiency, we may conclude that this heart is perfectly sound. If there be present evidence of weakness, or of other abnormal conditions, then the opinion we reach should be based on these conditions, and not on the murmur.

MITRAL REGURGITATION.

Nature of the Valve Changes and Character of the Murmur.

Mitral regurgitation may be the result of a damaged valve, or of dilatation of the auriculo-ventricular orifice from the giving way of the muscles supporting the valve. The murmur of mitral regurgitation is systolic in time; it is loudest at the apex. It may be soft and blowing and of little intensity. Sometimes in these cases it is heard over a very limited

area; in other instances it is propagated into the axilla; again, it may be rough and loud, and may be heard over the whole heart and round at the back of the chest. It is not always possible to tell whether this murmur is due to dilatation of the auriculo-ventricular orifice or to damage of the valve. The rough, loud type, with an accompanying thrill, is always a sign of a damaged valve.

Mitral Regurgitation and Failure of Heart Muscle.

When the muscle of the heart is unimpaired, little or no bad effect follows incompetence of the mitral valve. Even in those cases in which the regurgitation is due to "functional" dilatation of the orifice, the contractile power of the muscle may maintain a good and efficient circulation and the patients enjoy perfect health. The really serious trouble in connection with mitral regurgitation arises when the myocardium is damaged; the regurgitation may then add to the embarrassment. Yet it should be remembered that until the muscle actually gives way few symptoms of heart failure may be produced.

Dilatation is generally looked upon as the result of mitral regurgitation, the idea being that back-pressure ultimately causes the walls of the right heart to yield. This is not quite correct, for long before there is any back-pressure we may find evidence of a dilated right heart. Thus, if during one of the slight attacks of heart failure which are likely to occur after over-exertion we investigate the condition of a heart—in which the valves have been damaged by rheumatic endocarditis—we may find the organ slightly dilated, the right ventricle in front and the left ventricle pushed to the left, behind the lung. The apex beat in such a case is caused by the right ventricle, as is shown by the occurrence of an indrawing of the beat during systole. After a few days' rest and treatment, this right heart may retreat; the apex beat will then be caused by the left ventricle, and the beat will present the normal character, i.e. an out-thrust during systole (see Fig. 3). In these cases there is

FIG. 3 (repeated from p. 1233).—To show the out-thrust of the apex during systole (space *E*).

no evidence of pulmonary engorgement and back-pressure.

Damage to the valve is most commonly the result of rheumatic endocarditis, and, as we have seen, the process is rarely limited to the endocardium, but invades likewise the myocardium. Septic endocarditis also may damage the valve. In all cases of mitral stenosis there is mitral regurgitation; but the amount of the regurgitation is never so marked as to be the serious factor in the case.

Regurgitation occurs through a mitral orifice, of which the valve is uninjured, in the later stages of many affections—for example, conditions which produce exhaustion of the heart muscle and more especially renal disease and cardiosclerosis. Here the mischief is brought about by the failure of the muscle to support the orifice; regurgitation may in such cases furnish one sign of a final and fatal exhaustion of the heart muscle.

It will thus be seen that the symptoms produced by mitral incompetence are only grave when there is also muscle failure. In this latter event we shall encounter those symptoms of heart failure in general which we have already discussed, and the earliest of which is usually breathlessness on exertion. When dropsy sets in, auricular fibrillation (q.v.) is commonly present.

Mitral Regurgitation with Auricular Fibrillation.

The necessity of assessing the significance of mitral regurgitation in terms of the presence of signs of damage to the muscle becomes very evident when we examine the literature of this subject and note how great is the confusion of mind which inevitably results from an imperfect understanding of the nature of symptoms.

Angus Macdonald, in his book, quotes the cases of two women with mitral insufficiency who passed safely through repeated pregnancies (Cases XV. and XVI.). He then quotes the cases of two other women (XVIII. and XIX.) with mitral insufficiency who died from heart failure shortly after delivery. The one sign common to these four cases was a mitral systolic murmur. When, however, the other recorded signs are studied, a striking difference between the two groups is found. In the first group—those who did well—the response to effort was good; in the second—those who died—breathlessness on effort was noted and is clearly described. In one of those who died (Case XIX.), the pulse was "rapid and irregular," an almost sure indication that the patient suffered from auricular fibrillation—a matter of far more importance than the murmur. The post-mortem examination showed not only a damaged mitral valve, but a damaged myocardium.

Mitral Regurgitation and Pregnancy.

The detection of a mitral systolic murmur in a woman who is pregnant or who may become pregnant should cause the physician to consider the following points:

(1) The response to effort;
(2) The size of the heart;
(3) The rhythm of the heart.

If the response to effort is good and the heart is not increased in size, then the murmur requires no further consideration, as in all likelihood it is physiological.

If there be an increase in the size of the heart, but no diminution in the response to effort, and if the circulation is well maintained, then pregnancy may be allowed, even if there be a history of rheumatic fever.

If the size of the heart is increased and the response to effort is limited, then the case requires careful consideration. It must be determined whether the limitations are or are not due to a temporary cause and whether or not the heart muscle has been damaged. If no doubt remains that the heart muscle is damaged, then pregnancy should not be permitted.

If there is present an irregularity of the rhythm of the heart, the nature of this must be carefully investigated. Should the irregularity prove to be of the youthful or respiratory type, then there will be no danger if pregnancy is incurred. If, again, it is due to extra-systoles, no fear need be occasioned by their presence, for these of themselves afford no clue to the state of the heart's efficiency. In such instances opinion must be based on the presence or absence of other signs (size of the heart, response to effort).

Finally, if the irregularity is due to auricular fibrillation, opinion should be based on the circumstances to be described under that heading. The whole subject of irregularity is dealt with later.

MITRAL STENOSIS.

The heart affection which most frequently causes danger in pregnant women is that associated with mitral stenosis following rheumatic fever. Although this has long been recognised, yet we find some authorities to-day declaring that there is little danger. The reason for the diversity of opinion which prevails is that, in many cases, experience is limited. For it is a fact that there are forms of this complaint which are attended with no danger, and there are others which imperil the life of the woman. It is necessary, therefore, if we are to distinguish between the different forms, to look at mitral stenosis far more minutely than has usually been done.

Origin and Progress of the Cicatrising of the Mitral Valves.

Mitral stenosis is, perhaps, the most common of valvular defects with which heart failure is associated. It arises generally in consequence of rheumatic endocarditis, though it may be found in people with no rheumatic history; in these instances a previous history of erysipelas or some other febrile complaint may give a possible clue to its origin.

The condition is never recognised during the acute illness which induces it, for the reason that stenosis does not occur till the cicatrising process which follows the inflammation narrows the orifice. Thus, on account of its origin in scar formation, the lesion is often a progressive one. The stenosis may, however, remain moderate in amount, and offer so little embarrassment to the heart that patients may reach extreme old age with no heart failure. Usually the cicatrising process goes on with varying rapidity until in some cases the mitral orifice is reduced to a mere slit, and the valves resemble a thickened calcareous diaphragm. It is thus always important to bear the probably progressive nature of the lesion in mind. We have here the secret of the varying changes in the symptoms.

Accompanying Changes in the Heart Muscle.

It should also be borne in mind that a similar cicatrising process may be going on in the muscle, causing contraction of the chordæ tendineæ, impairing at other places the functional activity of the heart muscle, and affecting the auriculo-ventricular bundle and depressing its conductivity or producing those conditions which lead to auricular fibrillation. Such changes profoundly affect the efficiency of the heart and modify the nature of its rhythm.

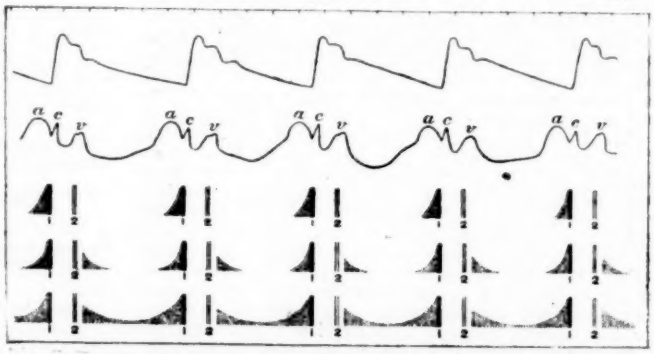

FIG. 6.—Tracings of the radial and jugular pulse with diagrammatic representation of the changes in the murmurs of mitral stenosis. The down strokes 1 and 2 represent the first and second sounds of the heart. The first indication of stenosis is the appearance of the murmur before the first sound, and on reference to the jugular tracing this murmur will be found to coincide in time with the wave *a*, due to the systole of the auricle. With an increase in the stenosis, a short diastolic murmur appears, immediately after the second sound, and this is represented in the middle diagram. A further increase in the stenosis, shown in the lowest diagram, leads to prolongation of the diastolic murmur, which in combination with the presystolic murmur fills up the whole interval between the second and first sounds. (For the next change see Fig. 7.)

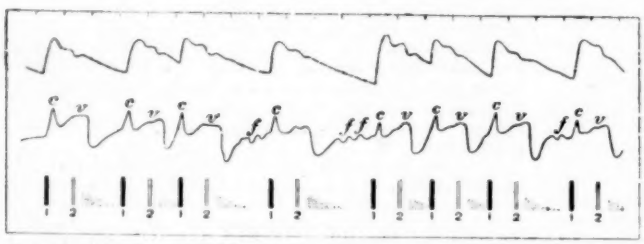

FIG. 7.—After the changes described in Fig. 6 the next change is a sudden alteration of the rhythm of the heart. In Fig. 6 the heart is quite regular; in Fig. 7 it is irregular. The wave *a*, which is a marked feature in the jugular tracing of Fig. 6, is absent in Fig. 7. The presystolic portion of the murmur is also absent in Fig. 7, this feature being best appreciated during the longer pauses of the irregularity. The disappearance of these evidences of auricular activity and the irregular action of the heart indicate the onset of auricular fibrillation. The waves *ff* are due to the fibrillating auricle.

Cause of Heart Failure.

From this it can readily be understood that the manner in which heart failure is brought about in mitral stenosis is somewhat complicated. In some patients embarrassment may not ensue until the narrowing of the orifice has become extreme. In others there may be a fatal issue while the narrowing is yet moderate. In these latter the muscle wall will invariably be found to have been damaged.

Presystolic Murmur in Mitral Stenosis.

The characteristic murmur present in mitral stenosis, the so-called presystolic murmur or auricular systolic murmur, is due to the passage of the blood through the narrowed mitral orifice. During the whole of ventricular diastole the blood is passing through the orifice, but until the contraction of the auricle forces it through with increased rapidity no sound is heard. With advancing cicatrisation, the murmur of mitral stenosis alters and presents peculiarities which have not hitherto been sufficiently appreciated. In the very early stages, some years before the appearance of a murmur, I have detected a slight presystolic thrill. After a time the thrill was accompanied by a murmur. This murmur precedes, or runs up to, and seems to terminate in the first sound; it is audible over a small area around the apex. At the beginning it may not always be present. This murmur is at first short in duration. As time goes on and the mitral orifice becomes narrow, it lengthens, beginning earlier in the diastole. It is of a crescendo character; rising in pitch till it ends in the first sound.

Diastolic Murmur in Mitral Stenosis.

With advancing stenosis of the orifice, another murmur makes its appearance. This one occurs immediately after the second sound, and is heard only in the immediate neighbourhood of the apex beat. At first it is very faint, and not very constant; but in time it increases in volume. This diastolic mitral murmur diminishes in intensity as it proceeds, differing thus (in its diminuendo character) from the presystolic murmur. Frequently during the diastole of the heart we can detect a continuous murmur, beginning loudly, falling away, then increasing in intensity. The first or diminuendo portion of such a murmur is the diastolic mitral murmur, the terminal crescendo portion is the presystolic. The cause of the diminuendo diastolic mitral murmur is the passage through the narrowed mitral orifice of the blood which has accumulated in the auricle during the ventricular systole. This passage begins as soon as the mitral valves open—that is, when the pressure in the ventricle falls below that in the auricle. The development of the murmurs is shown in Fig. 6.

The Appearance of Auricular Fibrillation.

The next change in the character of these murmurs is the sudden disappearance of the presystolic crescendo murmur, the diastolic murmur persisting. Usually this occurs with the onset of grave symptoms of heart failure, the action becoming rapid and irregular. At other times the change takes place with

no serious symptom, though the heart invariably becomes irregular. This irregularity is due to the fact that the rhythm of the organ no longer starts with an effective auricular systole. The auricle, on the contrary, ceases to contract as a whole, and passes into the condition of fibrillation (Fig. 7).

In those cases in which the heart's action is slow there is no difficulty in recognising the presence of the diastolic murmur and the absence of the presystolic. The diastolic murmur is, however, sometimes of greater length, and starts immediately after the second sound; in such cases, when the heart's action is rapid, it may fill up the whole diastolic pause, and might then be assumed to be presystolic. If the heart be carefully auscultated this error will be avoided, for the diastolic murmur is not crescendo in character. In auricular fibrillation long pauses may occur between two beats; and if this murmur be listened to then, it will be found that it stops short before the first sound, so that there is a silence between the end of the murmur and the beginning of the first sound (see Fig. 7). In these cases the jugular and liver pulses are invariably of the ventricular form, showing that the auricle, which erstwhile produced the presystolic murmur, is no longer acting.

Heart Failure in Mitral Stenosis.

From the progressive nature of the lesions in the valve and in the heart muscle it will be realised that the symptoms are not constant. The patient, as a rule, comes first under notice in early or middle adult life. The complaints, at this time, are shortness of breath, a sense of suffocation, and palpitation on exertion. In some instances the face is ruddy, with a hue a shade darker than is compatible with the ruddy countenance of robust health: in others there is pallor. At this stage there is little or no increase in the size of the heart and no dropsy. A presystolic murmur can usually be detected. The patient's complaints may be the only evidence we have of the heart failure; they point to an exhaustion of the reserve force. After a period of rest, this exhaustion may disappear, and the patient may go on for years with little further trouble. Some patients, however, break down again, when the symptoms complained of are usually those of the first attack. Frequently, however, a change is found in the character of the murmurs; a diastolic murmur is now commonly noted, and there is sometimes a longer duration of the thrill. These signs imply an increased narrowing of the orifice. In those in whom no further narrowing takes place the murmur does not change. These are the people who go on for many years, and, if females, may bear children with no breakdown. We can thus infer that there is no progressive muscular or valvular sclerosis.

With the increased narrowing of the orifice, as indicated by the appearance of the diastolic mitral murmur, the heart becomes much embarrassed, the symptoms become much more distressing, and finally dilatation of the organ may set in. But even in the absence of progressive narrowing of the orifice dilatation may appear early. This is a sure sign that the rheumatic process has permanently injured the heart muscle. It is to be noted that the left ventricle also dilates in many cases, showing that there is some vital factor concerned in dilatation.

Heart Failure in Mitral Stenosis with Pregnancy.

In mitral stenosis, as I have said, there does occur a degree of back-pressure which is the result of the narrowing of the mitral orifice. This latter event impedes the flow of blood so that there is a tendency to congestion of the lungs; it throws, too, more work on the chambers behind, i.e. the left auricle, and right ventricle and auricle. When these begin to fail the circulation in the lung becomes embarrassed, and then in cases of pregnancy the growth of the uterus adds further to this embarrassment. I have dwelt already on the embarrassment which occurs in the pulmonary circulation as a result of the widening of the thorax and the impairment of its movements which take place in pregnancy. The early signs of this embarrassment are found in the crepitations at the bases.

But that is not the whole story. The damage due to rheumatic fever is rarely limited to the valves; it frequently extends also to the heart muscle. As a rule no certain evidence of this is available. We are therefore under the necessity of making an inference from the increased size of the heart, the great excitability of its action, and its marked inefficiency. Occasionally, however, we do get more direct evidence. This occurs when the damage invades the bundle connecting the auricles and ventricles, and produces a partial heart block. That point need not concern us here, for the heart block in these cases rarely, if ever, reaches such a degree as to cause embarrassment to the organ in its work. Its significance lies in the fact that it reveals an extension of the disease process from the valves to the wall of the heart.

Estimation of the Significance of Mitral Stenosis in Pregnancy.

Recognising, then, that the sources of danger lie in the narrowness of the mitral orifice, and in the embarrassment of the heart muscle, we are in a position to estimate the danger. Our estimate will take account of several considerations; it will depend in the main on *the rate at which the cicatrisation of the mitral valves is proceeding.*

I have already indicated the means of determining this in describing the changes which occur in the murmurs. These changes afford a basis of assessment, rough, it is true, but still of distinct value. I set them down in serial order thus:

(*a*) When, ten or fifteen years after the causative rheumatic attack, there is only a presystolic murmur, with no signs of œdema of the lungs, and the response to effort is good, then the outlook is favourable. Such an individual can be permitted to become pregnant with fair assurance of safety.

(*b*) When there is not only a presystolic murmur, but also a diastolic murmur. If the heart is normal in size and not too excitable, and if it is capable of a fair response to effort, then pregnancy may proceed. The patient, however, should lead a somewhat restricted life, avoiding especially such effort as brings on breathlessness or palpitation.

(*c*) When, even with a short presystolic murmur, and many years after the causation of mitral stenosis, there is marked inefficiency of the heart, shown by breathlessness on slight exertion, rapid pulse or easily excited palpitation, then there is danger in pregnancy.

(*d*) When the heart is large or irritable, and when effort readily induces palpitation and breathlessness, even if there be no diastolic murmur, then pregnancy should be forbidden. If, in spite of advice, it has been undertaken, the case should be carefully watched, particular attention being paid to œdema of the lungs. If crepitations become persistent after coughing or deep breathing, the advisability of inducing premature labour should be considered. If the percussion note of the lungs becomes impaired, interference is called for.

AORTIC DISEASE.

Aortic Stenosis.

The form of aortic disease which need concern us is aortic regurgitation. Aortic stenosis apart from regurgitation is so rare in the young that I, personally, have never met with it. I repeat here that a systolic murmur at the base—or as some might say "over the aortic area"—should never be looked upon as a sign indicating damage to the aorta; it is not infrequent in people with perfectly healthy hearts. Therefore a systolic murmur at the base of the heart, with a good response to effort and no increase in the size of the heart, is negligible.

Aortic Regurgitation.

It is difficult to determine the relation of aortic regurgitation to heart failure.

I have watched many people with aortic regurgitation lead strenuous lives for twenty or thirty years with no limitation of their powers; others of my patients have suffered early from heart failure of a fatal kind. I have long endeavoured to distinguish between these types. I have found that in the former case the heart has been little, if at all, enlarged and the blood pressure only moderately raised. There has been no wide range between the systolic and diastolic pressures—in other words, there has been an absence of the "Corrigan" or "water-hammer" pulse. When, on the contrary, the heart is greatly enlarged and there is a marked "Corrigan" pulse (systolic pressure in the neighbourhood of 200, and diastolic 70 or 60), and when the response to effort is either greatly restricted or gradually becoming restricted, the outlook is grave.

I am inclined to the view that in the first type damage has been done only to the valves, and that to a small extent, while in the second the heart muscle has been invaded, or the valves have been greatly affected.

Heart Failure and Aortic Regurgitation.

I must, however, confess that I have been baffled in my attempts to understand heart failure in many cases of aortic regurgitation. When this condition sets in, it does so in such diverse ways that clear comprehension is very difficult. Sometimes, for example, effort is restricted because of pain, and this pain may be of a severe kind and easily provoked. Yet the degree of pain seems to bear no relation to the gravity of the condition. Thus, I have found some patients suffer for long periods of years great pain on slight exertion, while in the case of others pain has heralded a fatal issue. In some, again, heart failure is shown only by palpitation on exertion, these individuals suffering neither from pain nor breathlessness.

Some die suddenly with no previous sign of heart failure; others are as suddenly seized by an intense dyspnœa which ends fatally. Only a few have dropsy. I suspect that heart failure in these latter is due to the damage of the muscle more than to the regurgitation.

There is one peculiar feature about the heart failure of aortic regurgitation: when once it sets in, it proceeds apace. We all know what remarkable recoveries take place in people who break down from extreme heart failure with disease of the mitral valve, and even of the heart muscle; I have had no such experience in aortic regurgitation. My experience has been that, once the heart gives way, only very slight improvement ever takes place: moreover, in my own practice every case of aortic regurgitation which developed auricular fibrillation drifted to death.

Aortic Regurgitation and Pregnancy.

My experience of aortic regurgitation complicated by pregnancy is limited to two cases. In these the heart was only moderately enlarged. One was prematurely confined (seventh month). Both made good recoveries, but were left very weak. In both palpitation was easily induced. Neither ever improved. They drifted and died within two years. I have, however, had under my care a number of cases with aortic regurgitation who gave a history of rheumatic fever in their youth. They had borne children, and had not suffered in consequence. Presumably the aortic damage was done during the rheumatic fever attacks. There was only slight enlargement of the heart.

Drawing from my experience in general, I would be disposed to allow pregnancy in a young woman with aortic regurgitation, if there was no "Corrigan" pulse, if the heart was not enlarged or only slightly so, and if the response to effort was good. On the other hand, if there was a forcible apex beat outside the nipple line, a marked "Corrigan" pulse, and a distinct limitation of the response to effort, I should decide that pregnancy ought to be forbidden.

Lettsomian Lectures

[ABRIDGED]

ON

SURGERY OF THE LUNG AND PLEURA.

Delivered at the Medical Society of London on Feb. 7th and 21st, 1921,

BY G. E. GASK, C.M.G., D.S.O., F.R.C.S. ENG.,
SURGEON AND DIRECTOR OF SURGICAL UNIT, ST. BARTHOLOMEW'S HOSPITAL, ETC.

LECTURE III.—THE PRESENT POSITION OF SURGERY WITH REFERENCE TO DISEASES OF THE THORAX.

THE war compelled the attention of surgeons to a class of work which otherwise they would not have engaged in, and had a very distinct effect on the outlook of surgery towards diseases of the thorax; during the war surgeons learnt to open the pleural cavity, control hæmorrhage, and repair a wounded lung without serious difficulty and with great advantage to the patient. It would be a thousand pities if we were not able to turn these lessons to good account, and it is the purpose of this lecture to demonstrate a few points in which advancement might be made.

APPLICATION OF WAR-TIME EXPERIENCE.

Instead of turning to text-books on thoracic surgery, to see what is the current teaching, it may be useful to turn to the operation theatre lists, and to consider the patients who present themselves for treatment in the casualty departments and wards of the big hospitals. Looking at the operation lists, one is struck by the fact that, except for empyema, any operation on the interior of the thoracic cavity is of rare occurrence, and very few appear to be done; though there must be many patients who would greatly benefit if a safe and satisfactory opening of the chest could be made.

Now that danger from sepsis has been eliminated, the surgeon's only real dread is the danger of producing a pneumothorax. It is essential carefully to consider this point. In order to do clean and efficient work inside the thorax it is absolutely necessary, just as when dealing with the abdomen, to have a good exposure; a wide opening of the pleural cavity or mediastinum therefore becomes a sine qua non. The question may then be asked as to whether such a wide opening either kills the patient or causes serious respiratory disturbance; the answer is that during the war many hundreds of chests were opened without fatality or serious disturbance to the patient; and, moreover, that manipulation of the thoracic viscera was made without causing serious shock. If that can be done in military practice, why can it not be done in civil surgery? Or can the method be improved upon?

PRE-WAR METHODS OF MAINTAINING INTRA-PULMONARY PRESSURE.

If one turns to pre-war conditions, one finds that two forms of apparatus were recommended for the purpose of maintaining intrapulmonary pressure during the course of an operation on the thorax and eliminating the dangers of collapse of the lungs; these were the positive pressure chamber and the intratracheal insufflation. The great advocates of the pressure chamber were Sauerbruch of Munich and Willy Meyer of New York, and with its aid they certainly have done some fine work. Willy Meyer had constructed in his hospital in New York a chamber, costing thousands of dollars, for the regulation of pressure as needed. I had the opportunity of seeing this chamber and of arguing the need for it; in Meyer's opinion it makes the operation

both easier and safer, and he holds strongly that every thoracic surgeon should use it. It is not easy to traverse the opinion of such experts as Sauerbruch and Meyer, but my own deliberate opinion is that a way ought to be found that does not need such a bulky and expensive apparatus, and that unless such a way can be found thoracic surgery cannot come into daily use.

Intratracheal insufflation, with which is combined anæsthesia, has been used successfully in lung surgery; by this method a slight positive pressure can be maintained in the lung, and rapid and exaggerated movements which interfere with operative manipulation are minimised. The method has certain objections which are not, however, insuperable. These objections are: first, that the initial anæsthesia, before insertion of the tracheal tube, must be deep enough to abolish all reflexes; and, secondly, that the introduction of the tube into the trachea requires a certain amount of practice on the part of the anæsthetist. The method is a good one, has given good results, and must be seriously considered.

THE FACE-MASK METHOD.

Another scheme, which has been evolved during the war, may be called the positive pressure face-mask method. This calls for the use of an air-tight face-mask with a rubber reservoir for the gases. It is, in fact, a slight modification of the gas and oxygen anæsthesia apparatus, and by it a pressure of from 5 to 7 mm. of mercury is easily obtained, and may be raised still higher. This apparatus possesses the great advantage of being simple, cheap, portable, and easy to use. I have never had the opportunity of operating with the pressure chamber, and so I am not able to say much about it from personal experience, but I have used the other methods and can unhesitatingly affirm that the chest can be opened without undue danger to the patient and an intrathoracic operation satisfactorily performed.

Of the two methods—intratracheal insufflation and the air-tight face-mask—I prefer the intratracheal method; but if for any reason it is not possible to have either, the ordinary methods of anæsthesia, such as chloroform or ether, perhaps combined with oxygen, give good results. If these observations are accurate, then the expense and bulk of a pressure chamber is eliminated, and the dread of creating a pneumothorax should not prove a bar to the performance of intrathoracic operations.

DIAGNOSIS.

The next difficulty which confronts the surgeon is that of making an exact diagnosis of the nature and position of a disease within the chest. In the present state of our knowledge it is more difficult to localise, say, an abscess in the thorax than an abscess in the abdomen. The rigid wall of the thorax prevents one feeling a swelling with the hand, and in the case of the abdomen thousands of laparotomies have helped to rectify errors of diagnosis and standardise methods of treatment. It can only be by a patient and careful investigation of cases, together with a systematic investigation of our findings, that like result can be obtained.

If we turn our minds once again to thoracic work during the war, it is evident that the results obtained were due to a careful investigation of the wounds correlated with the X ray findings and localisation of foreign bodies. The same is true of civilian surgery, only here the problem is one of far greater difficulty on account of the multiplicity of the forms of disease and the fact that large numbers of patients suffering from the same variety of disease do not present themselves at the same time.

METHODS OF EXAMINATION.

It may be profitable to run through, very briefly, the various methods of examination which we have at our disposal for the purpose of making a diagnosis.

History.—A real help towards the attainment of a diagnosis is the taking of a careful history—occasionally even a correct localisation of the disease may be gained; attention must be paid to the history of pain, cough, difficulties of breathing, and swallowing.

Physical Examination.—A general survey of the whole patient is necessary as well as the well-known method of auscultation and percussion to which reference need not be made. The need for examination of the sputum, quantitatively, microscopically, and bacteriologically, is too well known to require comment. Then we have cystometry, and the use of the spirometer, bronchoscope, and œsophagoscope—each of which has its own rather limited sphere of utility.

Exploratory Puncture.—This process, performed with an aspirating needle, is often of definite service, though it must be remembered that a negative finding may sometimes be a hindrance rather than a help, and in my opinion patients with all the clinical signs of pus in their chests have often been kept too long from operation on account of the fact that pus was not found with the needle.

X Ray Examination.—In the last few years the X rays have proved to be a great help towards diagnosis and localisation of disease, and they will probably become of much greater value when our interpretation of the pictures has improved. It would, however, be very wrong to rely entirely on an X ray finding and neglect the ordinary clinical methods of examination; it is by a careful summing-up of all results of examination that the good diagnosis, so essential before operative treatment, can be arrived at.

Exploratory Thoracotomy.—This is the right thing to do when all other methods have failed to yield a diagnosis and when it is considered imperative that one should be made; and in my opinion, it is by a judicious use of exploratory thoracotomy that the surgery of the chest will be advanced. With our improved methods of surgery, the danger to life or health from the operation is very slight, and by it it is possible, as in the case of an exploratory laboratory, to gain an accurate knowledge of the diseased organs by direct inspection and palpation.

There is one great difference, however, between an operation for exploring the chest and one for exploring the abdomen; in the former an incision in the wrong place is of great importance, for the bony structure of the thorax does not allow of the amount of retraction of the parietes possible in the abdomen.

METHODS OF OPENING THE CHEST.

The technical difficulties of opening the chest, though greater than those of opening the abdomen, are by no means insuperable. Access to the pleural cavity is usually made from behind or from the side; the medial longitudinal opening, which is the common operation of preference in the case of the abdomen, is reserved for investigations of the mediastinum. Various incisions of the skin are used, the object of which is to bring into view the largest possible portion of the bony thorax; thus, longitudinal, L-shaped incisions, or flap may be employed.

The actual opening of the pleural cavity may be made in many ways. One or more ribs may be removed—usually subperiosteally—and at the end of the operation the edges of the parietal pleura are sewn together if possible, and then the muscles are drawn together over the defect of the rib. Or an osteoplastic flap is made, lifted up, and at the close of the operation replaced in situ. This method has drawbacks: it is followed by considerable pain and gives an ugly wound.

Personally, I have been in the habit of excising 4 inches of rib subperiosteally, and then inserting a rib spreader; by this incision a good view of the

interior of the chest can be obtained and a hand can easily be inserted into the pleural cavity. I was led to adopt this plan when operating on soldiers with wounds of the lung, when pieces of splintered rib commonly required removing. I am now of the opinion that an incision through an intercostal space is simpler, gives as good a view, is easier to close and causes less subsequent deformity, and I intend to use this method until a better one is found.

If the exploration has to be done in the upper part of the chest, intercostal retraction may not be sufficient on account of the small amount of spring of the upper ribs. In such a case extra room may be gained by dividing the rib above and below the incision at its costal junction.

CLOSURE OF THE CHEST.

After an opening by means of an intercostal incision, the chest can be closed without difficulty by suture either passed round or through the ribs immediately above and below the incision. The former or pericostal stitch has the merit of being quicker; a curved needle is passed through the whole thickness of the intercostal space at the upper edge of the upper rib; it is then passed under the lower rib and out through the lower intercostal space, just sufficiently removed from the inferior edge to miss the intercostal artery. If the transcostal stitch is used, holes are punched through the ribs above and below the incision, sutures threaded through, and then drawn tight.

Such a procedure as has just been detailed is that which is advised for an exploratory thoracotomy. I venture to emphasise the importance of this operation, for its usefulness has been abundantly proved in the war, and only by a comparison of the clinical findings and the actual pathological conditions present can improvements in diagnosis be obtained and sound lines for operative treatment laid down. In addition the possibility of the removal of certain forms of tumours can only be gauged when the chest is opened. I would like to repeat that exploratory thoracotomy can now be done without much danger, and there are good grounds to believe that it may become as easy to perform as exploratory laparotomy.

OPERATION OF SPLITTING THE STERNUM.

If the region of the chest to be explored lies in the upper and inner portion of the chest or in the mediastinum, the easiest means of access may be through the sternum.

The trans-sternal route is one of some antiquity; Maister Peter Lowe, writing in the latter end of the sixteenth century, records an operation of trepanning the sternum for evacuation of congealed water from under the sternum, by which he may have meant a chronic tuberculous abscess. Trephining the sternum does not give sufficient room to work, but splitting the sternum gives good access. It may be done in two ways.

One way is to make an oblique incision through the sternum from the second intercostal space into the notch at the top of the manubrium. A curved incision is made, starting in the middle line half an inch above the manubrium sterni, and continued in a curved direction to the third rib, one inch external to the edge of the sternum. The attachment of the intercostal muscles to the sternum in the second intercostal space is then severed and a director passed from the second space to the manubrial notch, keeping immediately under the bone; a special pair of sternum shears is then passed along the track of the director and the bone split. The two surfaces of the sternum are then clawed apart with retractors and good visible access is gained to the upper part of the mediastinum and the pleural space.

A second method is to split the sternum down the middle and turn up a flap consisting of sternum and the attached ribs. Two small trephine holes may be made with a Hudson's trephine, one opposite the second and the other opposite the sixth or seventh interspace; the sternum is then split medially between the two holes by the sternum shears; next, two cuts are made outwards, one from each trephine hole, through the sternum into an intercostal space, and a flap consisting of sternum and attached ribs lifted up. The internal mammary vessels are then brought into view, ligatured, and divided. The costal-sternal flap can then be lifted up and an excellent view of the mediastinum obtained. At the end of the operation the flap can be replaced, sutured in position, and the chest completely closed.

I have only done this operation twice, but it did not present any great difficulty; anæsthesia was smooth, the patient stood it well and made a good recovery. The first operation was performed for a young man with a large tumour of the chest, which turned out to be a cystic teratoma which burst into the pericardium. The incision into the chest as just described gave an excellent view; the cyst was exposed, emptied, a portion of the wall excised and drained. With more experience and practice the whole cyst could probably have been removed. As it is, the patient is relieved of all his symptoms and is healed. The second operation was done for a man who had been wounded by shrapnel at the Dardanelles. Ever since the wound the patient had been unable to work owing to pain, and it was suspected that the ball, which lay alongside the aorta, moving with each pulsation of the aorta, was the cause of the disability. Splitting the sternum in the way just described enabled the missile to be removed without great difficulty and without damage to the patient.

Teratomata of the thorax are of course rare, and it is not suggested that this can become a very common operation, but there are other tumours of the mediastinum for which this route may be useful.

The question is often asked whether it is possible to remove an entire lobe of a lung for such a disease as bronchiectasis or carcinoma. It is not at all difficult to remove a portion of the periphery of the lung; it has often been done for the removal of an injured portion of the lung during the war. Removal of the entire lobe presents certain difficulties; but it has been done successfuly, and may be done again if really required. The difficulty lies in the permanent closure of the bronchus. The method suggested by Willy Meyer recommends itself — namely, an adaptation of the usual way of securing and invaginating the stump of the appendix after appendicectomy. The stump of the bronchus is left as long as possible and then softened by crushing; next the end is ligatured, invaginated, and sewn over.

SPECIAL DISEASES.

It is not intended here to enter further into a discussion of the methods of treating such well-known and gross forms of disease as abcess of the lung or bronchiectasis, nor the various forms of tuberculous diseases; they well may later become the goal of preventive medicine or surgery. Nor will I do more than mention the possibility of handling malignant diseases of the œsophagus or upper end of the stomach. These subjects may become of more importance when methods of intrathoracic surgery have become easier and standardised, but at present they are hardly practicable. It is, however, worth while carefully to consider the subject of suppuration within the thorax, for that is a common condition, of which the dangers to life and health are great; and our methods of treatment cannot be said to have advanced far since the times of the ancients.

EMPYEMA.

The treatment of an ordinary straightforward case of empyema has not changed markedly for hundreds of years. In olden times it was opened by a cut with a razor through an intercostal space or by burning a hole with a red-hot iron. The

latter method was preferred by some surgeons as being less dolorous. Considerable advances have, however, been made with regard to our methods of investigation, for in addition to the physical examination we have the use of the exploring needle and the X rays. There is therefore rarely any excuse for missing an empyema when the pus is free in the pleural cavity. At the present time the usual treatment is to open the chest and drain the pleural cavity by means of a rubber tube, either through an intercostal incision or by excising an inch or so of rib. As the discharge lessens the tube is shortened, and if all goes well, as it often does, the partially collapsed or compressed lung expands, becomes adherent to the parietal layer of the pleura, and the patient is cured after a few weeks, though the chest may show some permanent flattening on the affected side. But all cases do not run such a favourable course; in many patients the external wound tends to close before the pleural cavity has become obliterated, and has to be reopened perhaps two or three times in order to evacuate a collection of pus. In such cases a permanent cure may still be obtained, at the expense of a more or less collapsed lung and a greatly thickened pleura. In other patients—luckily a minority—there is a persistent sinus, which if untreated lasts for years and is a source of grave danger.

IMPROVED TREATMENT OF ACUTE EMPYEMA.

It is universally recognised that a collection of pus in the pleural cavity is a dangerous condition, and it behoves us to consider whether the classical treatment can be improved on.

The first improvement to be noted is that which has followed making an air-tight closure round the drainage-tube which is inserted into the chest, and leading a tube from this to a vessel partly filled with water under the bed, so that pus may drain out and air may not be sucked back; by this device the lung is encouraged to expand more quickly, so as to obliterate the pleural space. It is not necessary to dilate on the many devices which have been invented to accomplish this end.

Another procedure which is still very much in the experimental stage, and therefore sub judice, is that of evacuation of the pus in the pleural cavity by open operation followed by immediate complete closure. During the last war medical officers had many cases of hæmothorax to treat. A certain proportion of these became infected and developed empyema, being usually opened and drained in the classical way. It was found, however, that if the infection was diagnosed at a very early stage the chest could be opened, the blood clot cleared out, and the chest closed without having to be drained. It is true that the number of patients treated in this way was small, and that there were many failures requiring subsequent drainage. It is also true that once infection had been established for several days the method appeared to be useless; moreover, success depended greatly on the amount of infection and the nature of the infecting organism, for in the presence of streptococci failure was the rule.

It has been suggested that this method should be applied to empyema in civilian patients, and in a few cases it has been carried out successfully. Before making any pronouncement in its favour it is, however, necessary that a much larger number of observations should be made than are now available, and in any case good judgment must be used to avoid the danger of allowing pus to reaccumulate. In general terms it may be said that the diagnosis of empyema must be made very early, and that in the presence of streptococci it is safer to drain rather than to close the chest.

TREATMENT OF A LOCALISED EMPYEMA.

The diagnosis of empyema is not always an easy matter, especially when pus is not present in any great quantity, or is so thick that it cannot be drawn through a needle, or when it is walled off by thick fibrous adhesions, or is lying between the lobes of the lung. In many such cases it has been the custom of clinicians to delay operating until pus has been located by means of the exploring needle. Often the abscess is never located by this means, and the pus tends to accumulate and track until it bursts into a bronchus and the patient commences to spit pus. It is well known that in this way a spontaneous cure may result, but it is at the expense of a great deal of discomfort and distress to the patient, and under less favourable circumstances pus spitting may continue for years with all its uncomfortable sequelæ. I submit that in such a case, when there is good reason to believe from the clinical findings that there is pus in the chest, and when it has been found impossible to localise it either with the exploring needle or the X rays, an exploratory thoracotomy should be undertaken; by this operation lives may be saved or prolonged convalescence shortened.

A CASE OF LOCALISED COLLECTION OF PUS.

To illustrate this point the following case may be quoted:—

A man, aged 37, was admitted to hospital suffering from a perforated gastric ulcer. The diagnosis was made promptly, the abdomen opened, the hole in the stomach sutured, and a gastro-enterostomy performed. A large amount of fluid and stomach contents was evacuated from the peritoneal cavity, and the abdomen closed except for a drain which was removed 48 hours later. The patient did well, the pulse and temperature falling to normal. Then suddenly three weeks after the operation the patient had a sudden sharp pain in the lower part of the right side of the chest, accompanied by a rising temperature. It was suspected that he had developed a subphrenic abscess, and that this abscess had caused infection of the pleural cavity, but a careful examination did not reveal one. Later he developed signs of pleurisy and some dullness over the base of the lung and he began to cough and spit. The temperature remained raised and a leucocytosis was present. He was needled on several occasions in various places, but no pus was found. A skiagram showed a general opacity of the lower part of the chest, but no localised abscess.

Acting on the belief that pus was present although it could not be located, an exploratory thoracotomy was undertaken. About four inches of the posterior portion of the ninth rib was excised, the pleural cavity opened, and a rib spreader inserted. The lung was found adherent by recently formed lymph to the parietal pleura. Search was made, first in the space between the lung and the diaphragm on the assumption that it would be there that pus would accumulate if infection had come from a subphrenic abscess. No pus was found. The exploration was then carried higher up and a localised collection of pus was found close to the spine, shut off from the general pleural cavity by layers of soft yellow lymph about a quarter of an inch thick. This cavity was drained, the temperature and pulse fell to normal, the coughing ceased, and the patient made a rapid recovery.

The collection of pus in this case did not form a rounded abscess, but was spread out in quite a thin layer over about three or four square inches of lung surface, and it was walled off by a thick layer of soft lymph. This will no doubt explain the difficulty of hitting it off with the needle, and the fact that it was not recognised with X rays. There is little doubt that had the patient been left without evacuation of the abscess, death, or long illness resulting in a more or less permanently damaged lung, would have supervened.

CHRONIC LOCALISED EMPYEMA.

There is another type of case which may be described as chronic localised empyema, which has its origin in the pleural cavity, becomes shut off by firm adhesions, and which discharges itself generally very incompletely via a bronchus. Such cases are well known; they tend to run a very chronic course and lead to great and permanent disability. They call emphatically for surgical assistance, though the treatment given is too often conservative. The following case may be used to illustrate this point:—

During the epidemic of 1918 a hospital nurse acquired influenza followed by pneumonia and an empyema, which

was treated by resection of rib and drainage. The empyema healed, but the patient was not cured, because for the succeeding nine months she had periodic attacks of fever, associated with cough and expectoration of pus. These attacks lasted a few weeks and then almost disappeared, but the patient was unable to do any work. The affected side of the chest was smaller than the opposite side and the lung did not expand well. The fingers were clubbed and there were the signs of a long-standing collection of pus within the chest; in addition X rays showed a considerable opacity. An incision was made along the sixth rib in the post-axillary line, about three inches of bone were resected, and the chest was opened by means of a rib spreader. Pus was found lying between the lobes, and there was immense thickening of the pleural membrane round it. The pus was evacuated and the thick mass of fibrous tissue dissected off the lung. The cavity was plugged temporarily with gauze soaked in flavine and the chest closed secondarily.

The patient made a good, quick recovery and is now working hard as a nurse. Had that patient been left alone she might have recovered by coughing up the pus, but convalescence would have been long and she might have become a chronic invalid. The only satisfactory way of dealing with the abscess was by an operation which gave a clear access to the affected part; and that operation is both safe and satisfactory.

TREATMENT OF A CHRONIC EMPYEMA SINUS.

Unfortunately many patients for whom a drainage operation has been performed do not heal, but are left with a permanent discharging sinus. The treatment of these people is very difficult and unsatisfactory; in hospital practice they are constant attenders in the casualty department until they become dissatisfied and drift away to other hospitals or infirmaries. In an empyema of long standing, whether it has been opened or not, the pleura (both visceral and parietal) is converted into a layer of fibrous tissue often half an inch or more in thickness. The lung in these cases is literally imprisoned by fibrous tissue; it cannot possibly expand and fill the cavity, no matter how hard the patient blows bubbles or does thoracic exercises. Meanwhile the fibrous tissue tends to contract, pulling the diaphragm up and the ribs in, though the rigidity of the bony thorax is generally too great to allow sufficient collapse to secure union of the visceral and parietal layers of the cavity.

There seem to be only two accepted methods of treating this condition. One is to remove a sufficient quantity of the bony thorax, so as to allow the parietes to fall in and obliterate the cavity; this is done by means of the well-known operation of Estlander.

The other method is, remove the visceral layer of fibrous tissue so as to allow the imprisoned lung to expand up to the parietes and so obliterate the cavity. For this purpose the operation known as decortication has been devised and is commonly associated with the great name of Tuffier. Estlander's operation is objectionable, for it spells great and permanent deformity of the chest and a permanently collapsed lung, yet it may be right and timely to save life even as amputation of a limb may be necessary.

The ideal treatment is to remove the fibrous sheathing and allow the imprisoned lung to expand, but it must be remembered that to be successful the operation must not be delayed so long that the collapsed lung has itself become hard and fibrous and no longer capable of expansion. The removal of the fibrous tissue is in itself not difficult, provided that good access can be gained especially towards the upper part of the cavity where the layer is generally thickest.

The difficulties which I have myself encountered were, firstly, that the thick fibrous walls did not allow good retraction of the chest, and secondly, that the small available working space makes it difficult to dissect away the thick fibrous tissue at the upper extremity of the pleural cavity, and it seems that the lung will not expand readily even if the bulk of the organ is freed from tissues and yet the apex is still bound down. Failures have been at least as common as successes, yet it seems clear that the method is a sound one, and that with increased experience a good operation will be evolved. Like most forms of treatment it must be undertaken early; the amount of time which should be allowed before it is performed must, however, be left to the judgment of the surgeon.

SKIN-GRAFTING THE SINUS.

There is yet another device for curing a persistent empyema sinus which has been used by Beck, of Chicago. He has skin-grafted the interior of the tissues and has shown patients cured in this manner. The method is not likely to be widely used; it is difficult to carry out, and the patient is left with a deep hole in the side, covered by skin, but very difficult to keep clean and non-odorous.

TUBERCULOSIS OF THE LUNG.

What is the position of surgery at the present time towards tuberculosis of the lung? About 1800 a certain number of surgeons conceived the idea that portions, or indeed the whole, of the lung might be removed. Animal experiments were performed which proved that portions could be removed with safety, the remaining lung expanding and filling the pleural cavity. On the strength of these experiments a certain number of operations were undertaken for the removal of portions of lung affected by tuberculosis.

With regard to these operations it may be said that they are never likely to have a wide application; not only because it is nearly certain that more than one part or more than one lung is affected, but also because in the early stage (in which alone surgical measures would be justifiable) there is a good chance of securing a cure by medical methods. There is a very general feeling, too, among surgeons that surgical treatment of tuberculosis should become less and less as our knowledge of preventive and curative medicine increases. As an example of this statement, one may turn to the treatment of tuberculous glands in the neck. Ten or fifteen years ago the removal of tuberculous glands in the neck was one of the common operations in hospital; now it is rare, for the glands are cured in other ways.

Of collapse of the lung by nitrogen no mention need be made here, for it is fully dealt with in medical books. When nitrogen replacement fails owing to adhesions preventing collapse of the lung, it may become necessary to remove a certain amount of the bony thorax so as to allow the chest wall to fall in, so that in that respect surgery may be of use.

CONCLUSION AND SUMMARY.

It is now time to sum up the conclusions to be arrived at and to state the point of these lectures. It has been pointed out that during the past 600 years surgery of the chest has at times receded and at times advanced, and that at no period has such progress been made as occurred during the last war. During that time surgeons overcame their dread of opening the closed thorax and learnt to repair a wounded lung and restore it to its normal function. It has also been demonstrated that in civil practice it is possible with safety to the patient and without expensive apparatus to open the chest widely and to deal with discarded processes which previously were unrelieved. The evidence that has been brought forward is intended as proof that the operation of thoracotomy is a sound and reasonable one.

I submit that more and more operations on the chest should be undertaken, and that with a wider experience the operation of thoracotomy will become as useful and ordinary as that of laparotomy.

THE OPERATION OF VENTROFIXATION,

WITH THE AFTER-RESULTS OF 220 CASES.

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VENTROFIXATION is a generic term for a large group of operations in which widely differing methods have been used to fix the uterus to the anterior abdominal wall. There is no doubt that many of these methods have been anatomically unsound, and have been followed by post-operative complications and obstetric difficulties, or the so-called fixation has resulted in the attachment of a long and futile band of peritoneum to an otherwise unaltered uterus. Such bands, which every gynæcologist has seen and excised, may easily lead to strangulation of bowel, and are therefore not only useless but dangerous. In other cases where true fixation has been achieved, entirely unsuitable parts of the uterus have been selected as fixation points—e.g., the upper segment, the fundus and even the posterior surface. A uterus anchored in this way is incapable of symmetrical enlargement, and subsequent pregnancies will either terminate in early abortion or end in some form of dystocia at term. In view of these facts it is perhaps not surprising that the operation is regarded with disfavour in some quarters. Such sequelæ certainly condemn the type of operation concerned and emphasise the danger of bad methods, but do not prove that the principle of ventrofixation is fundamentally unsound.

It is the purpose of this paper to show that a properly performed ventrofixation is free from undue risk, does not interfere with subsequent pregnancy or labour, and in a large majority of cases permanently cures the patient of those symptoms for which the operation is undertaken. Our conclusions are based on a number of cases operated on at the Hospital for Women, Liverpool, by one of us (J. E. G.), using one particular method throughout the series. Of 470 patients operated on prior to December, 1917, 220 have been traced. In 115 cases the operation was performed for retroversion, and in the remainder (105) as a part of the treatment of prolapse.

Indications for Operation.

Retroversion—congenital retroversion and retroponation—with a freely mobile uterus of normal size is symptomless, and in the absence of infection, repeated abortions, or sterility, does not justify operative interference.

Backache and dysmenorrhœa in such cases are due to associated neurosis, and the results of operation are disappointing—sometimes actually harmful. On the other hand, a bulky, tender, fixed, retroverted uterus is in a different category. Many of these cases follow labour and in most of them some degree of infection is present. Backward displacement by stretching peritoneal ligaments and kinking blood-vessels and lymphatics produces pain, enlargement of the uterus, œdema of the endometrium, and menorrhagia; menstruation becomes painful and prolonged, leucorrhœal discharge is increased, and other symptoms, such as dyspareunia and repeated abortions, may follow. If unrelieved chronic ill-health ensues, a condition of semi-invalidism characterised by a well-defined group of symptoms. (Table I.)

Prolapse.

We consider ventrofixation to be a necessary part of the surgical treatment of severe prolapse in young fertile women; for women past the menopause an abdominal operation is often undesirable and also unnecessary, for any lesion can be permanently cured by vaginal methods, either colporrhaphies or the interposition operation. We readily concede that prolapse can be successfully treated in young women by vaginal plastic work alone, but to accomplish this in severe cases (50 per cent. of our cases were complete procidentias) very sweeping colporrhaphies must be carried out, and usually amputation of the cervix.

Such sacrifice of tissue is inimical to subsequent conception. We have found that of 27 cases in which amputation of the cervix was performed, only 4 became pregnant afterwards (14·9 per cent.), compared with 59 subsequent pregnancies in the remaining 193 cases (30·5 per cent.—this figure should be higher as some of the patients were unmarried). Further, if pregnancy does occur the risk of perineal and vaginal lacerations during labour must logically be increased; in other words, there is a risk of reproducing the original lesion in an exaggerated form.

We believe that if ventrofixation (or some comparable abdominal operation) is practised in addition to the necessary vaginal repair, the latter may be safely restricted within moderate limits and the cervix, unless obviously diseased, conserved.

The advantages of a moderate colporrhaphy over a very extensive one need no emphasis. Sexual life and conception are not interfered with and labour entails no special risks. We are not concerned with the relative merits of ventrofixation and other abdominal procedures such as Gilliun's operation, for whilst we have seen excellent results in isolated cases, we have had no experience of a large number of results. (Table II.)

Description of Operation.

The necessary vaginal work which is first carried out consisted of the following operations in our cases:—

Anterior colporrhaphy	4	Dilatation and curettage	57
Posterior colporrhaphy	38	Trachelorrhaphy	14
Anterior and posterior colporrhaphy	67	Amputation of cervix	27
		Hæmorrhoids	5

Abdominal Incision.—A small two- or three-inch median incision is made extending from the symphysis pubis upwards, or alternatively the transverse (Pfannenstiel) method may be used; the latter, which was employed 73 times, gives satisfactory access, and leaves a sound and almost invisible scar, and can be safely recommended in the absence of infection. After opening the peritoneum the uterus and adnexa are examined for the purpose of determining their exact position and the presence and nature of lesions other than mere displacement. Any such lesions are then dealt with.

Additional abdominal procedures in the present series include:—

Separation of adhesions	25	Myomectomy	10
Salpingectomy	14	Herniotomy	6
Double salpingectomy	3	Appendicectomy	2
Salpingostomy	2	Utriculoplasty	1
Ovariotomy	10	D'Artigue's operation	1

In this case as D'Artigue's operation was found to be unsatisfactory when completed it was disregarded, and ventrofixation carried out in the usual way. The amount of associated infection is worthy of notice.

Formation of Bladder Septum.—The peritoneum covering the bladder is picked up in the middle line with a succession of Spencer Wells forceps arranged in file and extending from the utero-vesical attachment to the upper border of the symphysis pubis. It will be noticed that the latter point coincides with the parietal peritoneum at the lower angle of the incision.

Using these forceps as guides, a catgut suture is inserted in the centre of the utero-vesical fold and continued as a running stitch through the peritoneum covering the bladder, passing downwards, forwards, and upwards in the middle line until the parietal peritoneum is reached at the lower angle of the wound. This stitch is both continuous and interrupted, for the two ends are knotted at short intervals, thus bunching or gathering the peritoneum into one mass and forming a median septum stretching across the utero-vesical pouch between the uterus and the abdominal wall; the two ends of the suture are finally brought through the rectus fascia on each side, just above the symphysis pubis.

TABLE I.—*Retroversion Cases showing Age of Patient and Nature of Symptoms.*

	Age in decades.					Symptoms.								
						Pain.								
	10–20	20–30	30–40	40–50	50–60	Hypogastric and iliac.	Dysmenorrhœa.	Backache.	Bearing-down.	Menorrhagia.	Leucorrhœa.	Sterility.	Dysuria.	Repeated abortions.	Irregular menses.
No. of patients	4	30	63	27	1	32* / 59	14* / 58	24* / 45	6* / 10	22* / 45	4* / 36	8* / 19	1* / 18	4* / 8	7

* Number of patients in whom this particular symptom was specially predominant.

TABLE II.—*Prolapse Cases showing Age and Fertility of Patients and Type of Prolapse.*

	Age in decades.					Number of children.											Type of prolapse.			
	20–30	30–40	40–50	50–60	60–70	0	1	2	3	4	5	6	7	8	9	10	Cystocele.	Cystocele and rectocele.	Prolapse not complete.	Complete procidentia.
No. of patients..	17	43	41	3	1	4	24	17	22	10	6	11	1	1	3	3	4	7	44	50

TABLE III.—*Effect of Ventrofixation on Repeated Abortions.*

Case No.	Before operation.		Operation.	After operation.	
	Living children.	Abortions.		Abortions.	Living children.
69	0	4	Ventrofixation and myomectomy.	0	0
71	0	3	Long peritoneal suspension band found attached to fundus and excised. (A previous operation performed elsewhere.)	0	3 First labour occurred 11 months after operation.
70	2	4	Simple ventrofixation.	0	1 Patient added "first time labour was natural."
153	0	6	Simple ventrofixation.	0	1 B.B.A.: (9 lb. weight).
58	3	3	Simple ventrofixation.	0	2
Totals	5	20	—	0	7

TABLE IV.—*Effect of Ventrofixation on Labour.*

Total No. of patients operated on.	No. of patients confined.	No. of children.				Labour.				Dystocia.	Still-births.
		1	2	3	4	Easy.	Very hard.	Precipitate.	Forceps.		
220	63	34	14	13	2	23	4	2	27	0	—

TABLE V.—*Effect of Ventrofixation on Symptoms.*

—	Prolapse.	Retroversion.	Time since operation in years.												
			3	4	5	6	7	8	9	10	11	12	13	14	15
No. of patients ..	83	96	17	24	20	32	20	15	13	18	5	5	6	2	2

TABLE VI.—*Patients with Symptoms due to Labour.*

—	Original lesions.			Number of children.				Present complaint.			Forceps.	Stitches.
	Prolapse.	Complete prolapse.	Retroversion.	1	2	3	4	Unqualified answer.	"Occasionally."	"Slight."		
No. of patients ..	7	5	8	9	6	4	1	12	4	4	15	2

This septum effectually obliterates the space which would otherwise exist below the fixation area, converts the fixation band into a ridge, and hence by preventing the formation of adventitious bands and peritoneal fossæ, eliminates the danger of post-operative strangulation of bowel. It is, therefore, merely a safety device and does not act, and is not intended to act, as a uterine support. It must interfere to some extent with the upward movements of the bladder, but in actual practice such interference is negligible, for that viscus ascends freely on each side of the septum, there is no diminution in working capacity and no disturbance of the mechanics of micturition.

Fixation of Uterus.—The uterine wall immediately related to the utero-vesical fold of peritoneum is part of the lower uterine segment; its function during labour is passive dilatation. Repeated examinations during Cæsarean sections have failed to show any elevation of the level of this reflection. Fixation of a point that normally remains stationary cannot interfere with the symmetrical development required by pregnancy, or retard dilatation during labour. This area is therefore selected as the fixation point—i.e., the anterior surface of the uterus immediately above the attachment of the utero-vesical reflection of peritoneum.

Two silkworm-gut sutures are introduced with a round-bodied needle so as to include a fair bite of muscle, and then drawn through the rectus sheath immediately above the catgut suture forming the baldder septum.

It is important to notice that the peritoneum is deliberately avoided in these fixation sutures. The uterine muscle is thus brought into intimate contact with the rectus fascia and muscle, and a fibro-muscular ligament is formed at the junction. Closure of the abdomen is carried out in layers in the usual way. The operation is a simple one and may be completed in 15 to 20 minutes.

Results.

There are two chief methods of investigating results: the objective, in which the surgeon examines the patient and relies chiefly on his own findings, and the subjective, in which the patient's own statements are accepted as criteria of success or failure. Both these methods are open to criticism, for whilst an operation may be technically perfect it is not a true success if symptoms persist; conversely, symptoms complained of by the patient arise in some instances quite independently, and may have no connexion with the operation or with the original condition for which the operation was performed. It is, of course, obvious that the success of any operation can only be measured in terms of symptoms cured, and therefore the subjective method is, on the whole, more trustworthy, if sometimes unfair to the surgeon.

Although we have examined a good number of our patients (25 per cent. at least), we have used this method (the subjective) exclusively in assessing results, and we think it desirable to publish the questions asked in toto to show the completeness of our inquiry.

Dear Mrs. ——

You were operated upon by Dr. Gemmell some years ago at Shaw Street Hospital. He is anxious to know the result of the operation, and will be much obliged if you will answer the following questions and return the completed form. He will be glad if you will also report at Shaw Street, any Tuesday or Friday, between 2 and 3 o'clock.

1. Have you any complaint of the womb, &c., at present? If so, when did you first notice it?
2. Have you had any children since the operation? How many? Give dates.
3. Have you had any miscarriages since the operation? When did they occur? How many months were you pregnant?
4. Had you any special complaint when carrying these children?
5. Were the labours easy? Mention any special points such as instruments or operations?
6. Have you any difficulty in passing or holding the water?
7. Are your bowels regular? Have you any difficulty in holding the motions?
8. Are your periods regular and free from pain?
8a. Have you any discharge between your periods?
9. Is your general health good?

General Results.

1. One patient died from sepsis, aggravated by her own action in removing the dressing and walking to the lavatory the day following operation.
2. There were no cases of intestinal obstruction.
3. 179 patients described themselves as cured (including 43 women with 72 pregnancies).
4. Forty-one patients complained of symptoms, of whom 20 had been confined of 31 children and attributed their symptoms to labour; 14 of the remainder stated their complaint to be either slight or occasional, leaving seven patients as possible failures.

Effect of Ventrofixation on Conception and Pregnancy.

Conception.—The fact that 63 patients conceived subsequently proves that ventrofixation does not prevent conception in fertile women.

Sterility.—Of eight patients specially operated on for sterility (with retroversion) three became pregnant afterwards, one woman after seven and a half years of marriage, and two others after four and three years respectively. Of 28 married nulliparæ, eight afterwards had children.

Abortion.—Prior to operation 36 patients had aborted 58 times; afterwards 12 women aborted 13 times, eight of the latter had also borne living children since operation and had aborted previously (i.e., before operation). Of the remaining four patients, one attributed the miscarriage to overwork (when ignorant of her condition). In the second definite pelvic infection was found at the operation, necessitating left salpingectomy, whilst no reason was alleged for the remaining two cases, of whom one has since gone to full term.

Repeated Abortions.—Five patients were operated on for multiple abortions with the results shown in Table III. In view of the complexity of these processes—conception and sterility—it is impossible to dogmatise from a few cases, but it seems fair to conclude that the chances of conception are not diminished, and that by reducing the frequency of abortions, ventrofixation actually increases fertility.

Effect on Pregnancy.—Although one might have expected patients to complain of abnormal pains during pregnancy, actually only two patients did so, seven others mentioned various symptoms, such as swollen legs, hæmorrhage, cough, which could clearly have no bearing on the operation.

Effect on Labour.—The figures in Table IV. need no comment and permanently dispose of the idea that ventrofixation necessarily means dystocia.

Effect on Symptoms.—Patients without symptoms: 179 patients remained free from symptoms for periods ranging from three to 15 years, averaging seven. (Table V.)

Patients with Symptoms.—Forty-one patients (18·6 per cent.) complained of symptoms. Of these 20 attributed their trouble to labour.

Effect of Labour on Ventrofixation.—It is universally admitted that labour is the most potent of uterine displacements, and every plastic operation is severely tested by parturition. It is, of course, impossible to prevent vaginal lacerations by any form of abdominal procedure (excluding Cæsarean section), and we have already pointed out the increased likelihood of such injuries where extensive colporrhaphies have been carried out. In the absence of adequate repair vaginal prolapse must follow, and in those of our complaining prolapse cases that have been examined we have invariably found a vaginal lesion, with the uterus in normal position. So far we have not seen a long hypertrophied cervix, although such a condition is a natural sequence in advanced cases where the pelvic floor has "gone" and the uterus is supported solely from above.

To some degree these recurrences are preventable, lacerations and injuries, generally speaking, are commonest and severest in small pelves in which antenatal examination and pelvimetry (so often neglected) would reveal the contraction and suggest a remedy. The number of instrumental deliveries is excessive and unnecessary, and lastly, forceps are frequently "mis"-applied before the cervix is fully dilated on the principle that might is right. (Table VI.) The percentage of forceps deliveries

(75 per cent.) is striking in conjunction with the fact that only one patient mentioned stitches. It must also be remembered that 43 patients successfully passed through 72 confinements without subsequent complaint.

The remaining 21 patients who complained of symptoms had not been subjected to the strain of parturition. They fall into two groups, which may be briefly considered and tabulated. Group A, 10 prolapse patients (Table VII.), and Group B, 11 retroversion cases (Table VIII.).

In connexion with Group A we make the following suggestions:—

1. The age of patients at the time of operation (eight cases were between 40 and 50 years of age), makes the menopause a likely cause of symptoms, definitely proved in one or two cases examined by us—e.g., patient complains of a bearing down; the uterus and vagina in perfectly normal position; senile vaginitis found to be responsible for symptoms.

2. The interval elapsing before the appearance of symptoms—in four cases six or more years after operation.

3. Muscle overstrain and lack of tone is an undoubted factor—one patient, a thin woman of 50, was running a boarding house single-handed; another was a chronic bronchitic. Two other patients had developed inguinal herniæ, whilst deficient musculature was further exemplified by obesity and visceroptosis.

4. As every case qualified her answer it is fair to assume that all were improved.

With reference to Group B, Case 164 (Table VIII.) is important as being the only one in which we found the uterus retroverted. The original notes describe the uterus as enlarged and heavy, but omit to mention the suture material used; still this must be regarded as a primary operative failure. Neurosis is a factor in Cases 43 and 54. Recurrent infection and the menopause in Cases 200, 233, and 234. On the whole it is clear that the majority of these patients were benefited by the operation.

Considering these results as a whole we are convinced of the merits of ventrofixation. It was evident from the letters received from places so far apart as India, Canada, and Greece that many patients were very appreciative and attributed their excellent health to the operation. Although 18·4 per cent. complained of symptoms, such symptoms were frequently described as trivial, and do not disturb our confidence as to the value of the procedure.

TABLE VII.—*Ten Prolapse Patients with Symptoms in the Absence of Confinements.*

—	Age of patient in decades.			Original lesion.		Length of time elapsing before onset of symptoms.								Nature of complaint.			
	20–30	30–40	40–50	Partial prolapse.	Complete prolapse.	1	2	3	4	6	7	8	9	Occasional weakness	Slight falling of womb.	Discomfort only on exertion.	Bearing-down pain.
No. of patients..	1	1	8	5	5	2	1	2	1	1	1	1	1	1	2	5	2

TABLE VIII.—*Eleven Retroversion Patients with Symptoms in the Absence of Confinements.*

Case No.	Married or Single.	Age.	Children.	Chief symptoms before operation.	Years since operation.	Present complaint.
26	S.	30–40	0	Dysmenorrhœa and menorrhagia.	6	Cured for four years: dysmenorrhœa for two years.
43	S.	30–40	0	Dysmenorrhœa and menorrhagia. Abdominal pain.	6	Dysmenorrhœa and abdominal pain. (NOTE.—This patient had three previous abdominal operations.)
44	S.	20–30	0	Dysmenorrhœa, leucorrhœa and menorrhagia.	4	Cured for four years, bearing-down for three months.
54	M.	40–50	3	Bearing down, leucorrhœa and menorrhagia.	3	Pain continuous since operation.
68	M.	20–30	1	Abdominal pain, menorrhagia, leucorrhœa.	5	Occasional pain in stomach.
97	M.	20–30	0	Dysuria, dysmenorrhœa, backache.	4	Bearing-down on and off.
164	M.	40–50	11	Abdominal pain, backache.	11	Abdominal pain. Uterus found retroverted.
200	M.	20–30	1	Menorrhagia, dysmenorrhœa, leucorrhœa.	7	Cured for four years, now slight pain at periods. ? Recurrent infection.
233	S.	40–50	0	Abdominal pain, dysuria, leucorrhœa.	8	Tired strained feeling. T.B. tube was removed at operation.
234	M.	30–40	3	Menorrhagia, dyspareunia.	8	Bearing-down. Salpingectomy at operation (?T.B.).
309	M.	40–50	5	Abdominal pain, dysmenorrhœa.	10	Cured for seven years; dysmenorrhœa lately.

Conclusions.

1. Ventrofixation is a simple and useful operation for certain types of uterine displacement.

2. Post-operative intestinal complications do not occur and subsequent gestation and parturition are not interfered with if suitable technique is employed.

3. The frequency of abortion is diminished and fertility increased.

4. The percentage of patients subjectively cured is satisfactory, and the occurrence of symptoms after operation is largely due to factors beyond the control of the surgeon, namely: (*a*) Labour. (*b*) Over exertion. (*c*) Recurrence of infection. (*d*) The menopause. (*e*) Neurosis.

THE TREATMENT OF URINARY INCONTINENCE BY ELECTRICAL METHODS.

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URINARY incontinence does not in any way threaten life; if it is nocturnal only, it does not directly interfere with work or pleasure; and even when the control is imperfect by day as well as by night, the use of a receptacle usually enables the patient to carry on his business, and to take part, more or less, in the social doings of ordinary people. Nevertheless, this particular disorder is responsible for more distress of mind than that caused by many troubles of a physically more serious nature. In the young child the symptom is distressing to the parents rather than to the patient; but with the first plunge from home into the great world—even though this be represented at first by something no more formidable than a preparatory school—the conviction is brought home to the sufferer that he is not as other boys. Often he begins to feel a sense of shame, and this increases as he grows older.

When treatment fails, parents and patient are often consoled with the prophecy that all trouble will disappear with the onset of puberty. The boy resigns himself to his complaint, in the confident expectation that he will be better by the time he is 15 or 16; and, about that age, partly because the changes of adolescence really have in many cases a beneficial effect, partly because of the force of suggestion, the disorder often tends to improve, or disappears. But not always by any means. And the case which does not improve about the age of 15 is increasingly difficult to deal with. The previous suggestion of cure now becomes a counter-suggestion, and there is a great danger of the patient becoming morbid.

Wide Distribution of the Condition.

How many young men who inexplicably refuse invitations, who are "curious" in their behaviour, who shun the society of the other sex, are thus afflicted? We do not know. But the late war showed that of apparently healthy recruits, in all countries and from all classes, an unexpectedly large percentage were afflicted with functional urinary troubles. Yet in private practice the condition seems rarely met with among otherwise healthy adults. I venture to suggest that it is in reality fairly common, but that the victims, partly from a feeling of false shame, and partly from a belief that they are too old to be in any way helped, do not often seek medical advice. Girls appear to suffer much more rarely than boys, but when it occurs in them the condition is even more distressing. Whatever the sex it is important to cure the condition if possible during the period of home life.

When control has never been properly established, there is often a general nervous defect—the child is somewhat backward, stammering is frequent, and there is often some diurnal as well as nocturnal trouble. In other cases the disorder comes on gradually between the ages of 4 and 5, sometimes in children who seem to be in every other respect normal.

Possible Causes.

In either case the most careful search should be made for possible exciting causes, which may be either local or general. The two things most likely to be directly productive of incontinence are stone in the bladder and scybalæ in the rectum. Vesical calculus in young children is more common than is generally believed. X ray examination will detect 90 to 95 per cent. of all bladder stones; for the residue, consisting of uric acid, cystoscopy is necessary. Intestinal worms are a source of both local and general nervous irritation. A long prepuce has been much blamed as a local cause, but to remove it simply because it is long is not a justifiable proceeding. There is always some risk, however slight, in the administration of a general anæsthetic and incontinence is too often unbenefited. Unless, therefore, there is some other reason for the circumcision in addition to that of possible benefit to the enuresis, it should not be performed until other measures have failed. Adenoids are of great importance: not that one can count upon their removal effecting a cure, but a cure by other means is impossible so long as the handicap of adenoids or "tonsils and adenoids" is allowed to remain.

Treatment by Drugs and Suggestion.

Drug treatment can be alluded to only very briefly. Belladonna is often much abused; it should be employed only with a view to "breaking the habit," and never be pushed for more than two months at a time. It is useless and even harmful when there is definite lack of tone in the sphincters: here nux vomica is indicated. Thyroid (advocated by Dr. Leonard Williams) is useful in some cases, especially when there are adenoids. Alkalies may be useful where the urine can be shown to be hyperacid.

Suggestion treatment, hypnotic or otherwise, while of great value, may fail when employed alone. Most cases are compounded of a physical and a mental element; and either the first or the second may predominate. In the latter event psychical methods have a great field; but if they do not succeed quickly an auto-suggestion of incurability may be set up, and the difficulty of cure is much increased.

Electrical Treatment.

Electrical treatment has been employed for nocturnal enuresis for many years—in fact, reference can be found to it in text-books half a century old. Galvanism and faradism were then used with some success. We have now added the high-frequency condenser electrode to our armamentarium. Interrupted currents are employed to produce rhythmical contraction of the abdominal muscles; the condenser electrode is inserted per rectum. In this latter case the patient feels nothing, but a spark may be drawn from any part of his body. These methods both aim at increasing local and general tone. They should always be employed for some weeks before anything more drastic is contemplated. For the first week or ten days, the method should be unaccompanied by any verbal suggestion, other than an initial explanatory statement in the case of older children. These should be told that the brain controls the bladder even during sleep, provided that it gets proper messages as to the state of affairs there; and that the effect of the electricity will be to increase the strength of the messages—"to make the telephone bell ring more loudly."

Combination of Suggestion with Electrical Treatment.

If there is no improvement within ten days a definite suggestion should be made to the effect that, although the bladder is not yet strong enough to hold its water all night, yet its distress signals will wake the patient before an accident happens. This is often successful, even though previously, without the use of electricity, the suggestion may have been made in vain. (The kind of suggestion here referred to is, of course, ordinary "waking suggestion" and persuasion: hypnosis should not be employed except by experts in the subject.) If the patient can be got to wake regularly feeling a desire to micturate, the battle is practically won, and in most cases undisturbed nights are ultimately

arrived at. When it is not possible to get the child to wake as the result of sensation from his bladder, an alternative is to have him awaked at certain fixed hours for the purpose of making water. This is generally best accomplished by post-hypnotic suggestion, and is probably not made any easier to accomplish by electrical treatment, which latter aims at increasing the intensity of the natural call.

Internal Application of Electrical Methods.

Internal methods of electrical application are unpleasant and sometimes even painful. In unskilled hands they may be dangerous. The simplest method is to introduce a metal bougie into the bladder and pass a faradic current through it up to the patient's limit of tolerance. The risks are no more than such as are involved when any metallic instrument is passed into the bladder. A second method is to fill the bladder with a weak solution of zinc sulphate and pass into the bladder a rubber catheter containing a wire of soft metal. Care must be taken that the metal does not at any point come into contact with the wall of the bladder or the urethra. A current of 10 to 15 milliamperes is then passed for 10 minutes, the wire being positive; a pad is placed under the buttocks to form the negative pole. This proceeding may be repeated every other day for a fortnight.

The above methods increase sensibility as well as tone. They ultimately produce a certain amount of soreness which may aid in stimulating the patient's attention. But the action differs from that resulting from the mere introduction of an irritating solution into the bladder. I have seen cases of the latter in which the reaction was very severe, causing the patient to wake up to make water with pain and tribulation for days and even weeks: yet, ultimately, the incontinence was not even benefited.

Prognosis.

As to prognosis, on the whole, the cases in which the trouble comes on in apparently healthy children at the age of 4 or 5 are the most difficult to cure; but it should be possible to get a satisfactory result in at least 50 per cent. of such cases, even when various other methods have failed. The backward child, physically and mentally underdeveloped, benefits in a remarkable manner from the general effects of electricity, unless there is some actual congenital defect. The cure of the incontinence may, however, be delayed—the child has first to be brought to a stage of mental development where he can coöperate with the physician. The change in the physical and mental outlook of such little patients after a few weeks' treatment is often most gratifying to their friends and relations.

The time required to effect a cure in a favourable case is about a month, the patient being seen four or five days a week. A case which is definitely benefited but not cured in four weeks may require a further month to banish the trouble. On the other hand, if no improvement takes place in a month, it is best to have the case treated by hypnosis, either alone, or in combination with some electrical procedure which has not previously been used. It should not be forgotten, however, that the good effects of electrical treatment are sometimes a little delayed, and I have known several cases of boys who seemed little better at the time, yet proved to be greatly benefited after their return to school.

Incontinence occasionally follows an attack of infantile paralysis, the statements found in some text-books to the contrary notwithstanding. It is usually amenable to electrical methods and, when banished, the result is lasting.

Incontinence and Progressive Spinal Disease.

The case of incontinence occurring in the course of progressive diseases of the spinal cord—e.g., disseminated sclerosis—is somewhat different. It is impossible here to bring about a permanent cure; nevertheless, the sufferer should not be denied assistance, as a remission for several months can be secured by a few weeks' treatment; and such short courses can be repeated more than once with equally good effects. Besides the usual electrical technique X rays should be applied to the spine. I have personal knowledge of a patient suffering from disseminated sclerosis who has been kept comfortable as regards incontinence for nearly eight years, during which he has had seven courses of electricity and X rays, each of about four weeks' duration. This is an exception; but instances in which the incontinence has been kept at bay for three to four years are not uncommon. The urinary symptoms are often more distressing to the patient than the paralysis itself.

Percentage of Cures to be Expected.

To return for a moment, in conclusion, to nocturnal incontinence. Not every case can be cured by electricity—or for that matter, by any known methods. At the Cambridge Hospital, Aldershot, during the war, we worked out statistics for several hundred cases, and found that 65 per cent. were cured—i.e., they were reported as free from trouble a month after their return to their regiments. But these patients were all otherwise well-developed lads of between 19 and 20. Taking all types of patients, at all ages—which in my private practice have ranged from 3½ to 27—the percentage of cures to be counted on is over 50, but probably less than 60. This is a conservative estimate. One's results improve with experience, and, without being unduly optimistic, it is permissible to expect that in future it will be possible to attain success in three out of every four such cases.

SQUINT:

THE QUESTION OF EARLY OPERATION.

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DURING recent years a number of papers have appeared upon the treatment of strabismus convergens and divergens, and several discussions have taken place at ophthalmic meetings, especially in America, upon this subject. There has been a general consensus of opinion that untreated squint produces, in a large number of cases, amblyopia, or blindness in the squinting eye, so-called amblyopia ex anopsiâ. This practical unanimity of opinion, notwithstanding Poulard,[1] has been reached mainly since the publication of the valuable researches of Mr. Claud Worth,[2] who was almost the first to measure accurately the visual acuity of young children immediately after the onset of the strabismus.

He has been able to demonstrate that amblyopia ex anopsiâ is almost entirely due to the convergent squint of childhood by showing that cases in which at the onset the vision of both eyes was normal, or nearly normal, when left untreated for two or three years returned with the squinting eye amblyopic or nearly blind. Prior to his time the accepted view was that the amblyopia preceded the squint, and was partly the cause of it. The amblyopia ex anopsiâ which follows squint varies generally between 6/24 and 0·5/60, and usually means complete inability to read ordinary type. When the vision is improved by glasses it is the defect which cannot be corrected which is called amblyopia ex anopsiâ. This form of amblyopia develops, as its name implies, from want of use. The squinting child would see double if he used both eyes. The child unconsciously suppresses the image of the squinting eye and does not use it, so that the vision in it is more or less lost. Diplopia may be elicited by special tests in recent cases. It is the same as if we bound up the arm of a child for months and years. It would waste and atrophy. If we bandage the eye of a young child for months it will also be found to become amblyopic; but adults do not lose the vision of an eye by prolonged occlusion.

The earlier that a convergent squint commences in childhood the greater is the degree of the amblyopia. Amblyopia is also increased by the duration of the squint; it does not, as a rule, occur when the squint commences after 7 years of age. At least, I do not recall having seen a case of it in which the strabismus had come on after that age, but when strabismus convergens develops under 3 years of age the squinting eye is almost certain to become amblyopic or blind. The only exceptions are when the squint is alternating, in which case the vision remains good in both eyes, or when the vision is saved by training the squinting eye, with or without occlusion of the good eye. These cases, however, are exceptional when the squint develops before 3 years of age. When the onset is between 3 and 6 years of age there is still great danger of amblyopia developing in the squinting eye, but it is more easily prevented by non-operative methods of treatment. The rate at which amblyopia develops varies in these cases, but I have seen several instances where it has come on within a period of from four to six months. I have observed amblyopia develop in a child's good eye which was being occluded for the sake of bringing back the vision to the squinting eye, but the vision recovered after removing the occlusive bandage. The younger the child the more rapidly the amblyopia develops.

Method of Testing Vision.

In testing the vision of these young children one must gain their confidence. My usual plan is to cover the squinting eye and to teach them the names of the different objects on the test types, on which are represented horses, pails, barrows, flags, &c. After the child gets to know the names of the different test objects the parent is told to cover the good eye completely with a handkerchief so as to make sure that the child is not seeing with it. The child now knows the names of the objects on the test type, but has not had time to remember their order. He will often show his blindness by giving the wrong names when the squinting eye is thus tested. He must be brought nearer and nearer, at the same time taking great care to prevent his seeing with the good eye, until he is able to state correctly the name of the largest object. A child sometimes cannot even name, with the amblyopic eye, the largest object at a distance of half a metre. Transfer the cover then to the defective eye, and you can at once demonstrate to the parents how good the sight is in the other eye, because generally they attribute the defect of the blind eye to ignorance and not to defective sight. The vision should be tested before the use of atropin, but if the child becomes irritable it is best to repeat the examination a week later, and try again to gain the confidence of the child. It is remarkable how quickly they become accustomed to the various steps of the examination.

The refraction should be tested after the use of atropin for children or homatropin for adults, while the fields of fixation and the positive and negative ranges of convergence should be investigated as pointed out by Mr. Freeland Fergus.[3]

Treatment.

Non-operative.—For a number of years I attempted to cure the concomitant strabismus convergens and strabismus divergens of childhood by non-operative methods, such as occlusion of the good eye and prism training. Each case was examined for astigmatism, and suitable glasses were prescribed. I always attempted to give as high a value as possible to the hypermetropic element in convergent cases, which means in myopic convergent cases the weakest spherical element possible. In divergent cases, on the other hand, the lowest hypermetropic element was taken, and if the eyes were short-sighted the strongest myopic glass which could be safely prescribed was employed. After the glasses were prescribed the children were kept on atropin for a prolonged period in the convergent cases, while the good eye was occluded more or less constantly. To private patients I lent Priestley-Smith's tubes or prescribed prisms for training purposes. These methods always took a considerable time, and even after a course of 6 or 12 months they frequently failed. I was therefore driven more and more to operate for the treatment of squint. It is unnecessary to give the history of such cases.

Operative.—In former times it was said that one should wait until the child was 15 years of age before operating upon the squint. When it became generally recognised that by this time the squinting eye was often hopelessly blind and practically useless it was suggested that the operation should be performed at 7 years of age. However, I found that that age was far too late in many cases. A 7-year old child is often brought for treatment who has had two or three pairs of glasses and is still squinting, while the squinting eye is nearly blind.

Kearney,[4] in a recent article, states that he has also been driven to operate in most cases of strabismus convergens and I would agree with all he says on the subject, but I would urge that the operation should be undertaken earlier. Amblyopia may develop rapidly. I have seen it come on in the course of six months, and on the other hand, I have seen it disappear equally rapidly after a successful operation done for a patient who was 4 years of age.

The following cases show what can be done by early operation and training of the amblyopic eye.

CASE 1.—Jan. 21st, 1916: V. U., a girl aged 3 years, a patient of the late Dr. Willis, of Strathaven. Strabismus convergens of right eye. Angle 50°. Duration four months. Illiterate type. V.R. 6/36, V.L. 6/12. Ordered atropin to both eyes. 28th: Retinoscopy:

R.	+4.5 +7.5	L.	+5.5 +8.5

Ophthalmometer, R. and L. 3·5 D. ax. 90°. Feb. 4th: V.R. +3 D. Sph. +3 D. Cyl. ax. 90° = 6/36. V.L. +4 D. Sph. +1·5 D. Cyl. ax. 90° = 6/12. Ordered R +2·75 D. Sph. +3 D. Cyl. ax. 90°. L. +3·5 D. Sph. +1·5 D. Cyl. ax. 90°. To keep left occluded all day. April 7th: Advised operation. Oct. 10th: R. Advancement rectus externus with modified tenotomy rectus internus. 24th: Straight. March 29th, 1920: V.R. +4 D. Sph. +4 D. Cyl. ax. 90° = 6/12, 1 letter. V.L. +4 D. Sph. +2 D. Cyl. ax. 90° = 6/6 letters. Straight. No return of the squint.

CASE 2.—August 5th, 1918: R. W., a boy aged 4½ years. A patient of Dr. D. J. Graham, of Edinburgh. Strabismus convergens of left eye. Angle 35°. Duration two years. Illiterate type. V.R. 6/12, V.L. 0·5/60. Ordered atropin to both eyes and to cover right eye two hours daily. Oct. 10th: Advised operation. Stop atropin. Nov. 27th: L. Advancement rectus externus with modified tenotomy rectus internus. Dec. 14th: Stitches removed. R. converging 10°. Jan. 28th, 1919: R. Advancement rectus externus with modified tenotomy rectus internus. April 3rd: Straight V.R. 6/18, L. 6/24. Sept. 4th: Straight V.R. 6/12, L. 6/9. Nov. 15th, 1920: Straight, with gl. V.R. 6/6, with gl. L. 6/6. Stop occlusion of right eye.

CASE 3.—Oct. 28th, 1918: W. R. W., a boy aged 8 years (elder brother of Case 2). Strabismus convergens of right eye. Angle 40°. Duration four years. Has had glasses +1 D. Sph. all the time, but they have done no good. V.R. 6/24, V.L. 6/6. Advised operation. Nov. 27th: R. Advancement rectus externus with simple tenotomy rectus internus. Dec. 14th: Stitches removed. April 3rd, 1919: Straight V.R. 6/6, 2 letters. V.L. 6/3, 1 letter. May 21st: R. Converging 5°. V.R. 6/9. V.L. 6/3, 1 letter. June 11th: L. Advancement rectus externus. Sept. 4th: Straight R. 6/6, 4 letters, L. 6/3. Jan. 13th, 1920: Straight R. 6/6, L. 6/3.

CASE 4.—Nov. 10th, 1919: J. A. M., a boy aged 7 years. Strabismus convergens of left eye. Angle 35°–45°. Duration 3½ years. V.R. 6/6. With glasses 6/6. V.L. 6/36. With glasses 6/18. Advised operation. 26th: L. Advancement rectus externus. Dec. 6th: R. Advancement rectus externus. Jan. 28th, 1920: L. Still converging. April 9th: L. Re-advancement rectus externus with modified tenotomy rectus internus. 26th:

R.	+3 +3·5	L.	+1·5 +4·5.

Ophthalmometer, R. 1 D. ax. 90°. L. 4·5 D. ax. 90°. May 18th: V.R. +1·5 D. Sph. +0·5 D. Cyl. ax. 90° = 6/5. V.L. +1 D. Sph. +2·5 D. Cyl. ax. 90° = 6/9, 3 letters. Ordered above lenses, and atropin to right eye. Feb. 2nd, 1921: V.R. (dilated pupil) with above glasses, 6/12. V.L. (active pupil) 6/24. With glasses, 6/9, 2 letters. No return of the squint.

CASE 5.—Nov. 28th, 1919: J. I., a boy aged 5½ years. A patient of Dr. Robertson, of Motherwell. Strabismus convergens of the left eye of three months' duration. V.R. 6/9. V.L. 4/60. Atropin drops to both eyes. Dec. 3rd:

R. +4·5 +5 L. +4·5 +5·5.

Ophthalmometer, R. 1·5 ax. 90°. L. 2·5 ax. 90°. V.R. +3 D. Sph. +0·5 D. Cyl. ax. 90° = 6/9. V.L. +3 D. Sph. +1 D. Cyl. ax. 90° = 6/60. Advised operation. Jan. 31st, 1920: L. Advancement rectus externus. Feb. 14th: R. Advancement rectus externus. 23rd: L. Modified tenotomy rectus internus. March 26th: Straight. Ordered: R. +2 D. Sph. +0·5 D. Cyl. ax. 90°. L. +2 D. Sph. +1 D. Cyl. ax. 90°. March 23rd, 1921: V.R. 6/6. V.L. 6/24. Glasses no improvement. This patient has had no special training by occluding the right eye, but he is now again instructed to cover the right eye two hours daily.

Recovery of Vision in the Squinting Eye.

The table gives the visual acuity of the squinting eye, after correction with glasses if they were necessary, both before operation and at the latest date on which

Case.	Before operation.	After operation.	Occlusion of good eye.
1	6/36	6/12	Half a day for 2 months.
2	0·5/60	6/6	2 hours daily for 15 months.
3	6/24	6/6	None.
4	6/18	6/9	Half a day for 12 months.
5	6/60	6/24	None.

I have seen the patients after operation. The last column gives the duration of the occlusion of the non-squinting eye, in these cases of monocular strabismus. It will be seen that there was no occlusion of the good eye in Cases 3 and 5.

Remarks.

Case 3 was 8 years of age when he first came, and the squint had been present for four years, during all of which time he had worn glasses. After the operation he discarded his spectacles. They were +1 D. spheres, and had been prescribed by another ophthalmic surgeon. I told the boy to wear them if he had pain in his eyes while reading, but they have not been necessary.

Case 5 was 5¼ years of age, and the squint had been present for three years. The improvement in vision, as above, was found a year after the operation, although no training had been undertaken at all. Instructions have now again been given to occlude the good eye for two hours daily, and to report in three months time. The other three cases have all had more or less continuous occlusion of the good eye.

Case 1 was 3 years of age, and the squint had been present for four months. After the operation she stopped attending and was lost sight of for four years. The occlusion had only been used for two months, and the improvement in vision was therefore almost entirely due to the result of the operation.

Case 2 had never been treated with glasses, and his vision made remarkable improvement from the date of operation. When he first came he was unable to recognise the largest letter except at a distance of ½ a metre. He was 4½ years of age, and the squint had been present for two years. He had occlusion of the good eye for two hours daily for about 15 months, and at the end of that time the vision had improved from 0·5/60 to 6/9. Recently he has been ordered glasses, and with these there was a further improvement to 6/6 in both eyes separately.

Case 4 was 7 years of age and had the squint for 3½ years. After operation the vision of the squinting eye had improved from 6/18 to 6/9. He has had atropin in the good eye, as well as occlusion, but the vision of the squinting eye still remains slightly defective. This is probably due to the fact that there was great difficulty in persuading the boy to keep the good eye occluded, and he constantly pushed the patch aside from the right eye. He has not yet been able to reach more than 6/9.

It will be seen, therefore, that each of the cases show an improvement in the vision of the squinting eye after the operation, two of them being without any occlusion of the good eye, while the remarkable recovery of Case 2 was due to the operation as much as to the occlusion of the good eye. If a child of 1 to 3 years is going to lose the sight of one eye, why should it be refused an operation, when by such an operation amblyopia may be prevented. The position which I take up is that the operation should be done within a reasonably short period after the appearance of the squint.

Children are frequently brought to us when the squint has just appeared. If we then give them glasses the parents are satisfied and they disappear, and nothing further is done. The glasses are often lost, and when they come back we find that the squinting eye is practically blind. Would it not be far better to perform the operation when the children are first brought to us? If the eyes are put straight it is the best chance for recovery of vision in the squinting eye. The earlier the operation is done the better, because there is a far greater tendency to the recovery of function. If the operation is delayed there is less likelihood of the disappearance of the amblyopia, and, indeed, it is not to be expected after the age of 15 or 20.

The one condition is that the squinting eye be put straight, both for near and for distance. The operation is useless unless the eye is made absolutely straight. If there is the slightest squint still present there is no recovery of function, because the child would again see double, and therefore still suppress the vision of the squinting eye. It has been said that the same may be done by non-operative methods, including glasses, but it is well known that the squint often recurs with the glasses. I would go further. The squint must be put so straight by operation that it is independent of glasses, unless they are required for refractive errors. It is a pure waste of time trying non-operative methods if we have to fall back on operation at the end.

Objections.

One objection that has been raised against early operation is that if the squint is left alone a certain number of cases come straight. This point, of course, is known to everyone, and has been found recently in the recruiting stations. Dr. Clarence Löeb[5] has pointed out that the number of men with one eye amblyopic made a fairly considerable percentage of the returns from the eye examinations of recruits, whereas adult men with a convergent squint were in a much smaller percentage. He suggested that if the amblyopia caused the squint, the ratio should be in the inverse. The cases which come straight without operation in my experience are nearly always those which have become amblyopic in the squinting eye. In such a case, had it been operated on within a short period of the onset of the squint the amblyopia would have been prevented.

The second objection which has been raised is that some parents prefer their children's eyes to be put straight by glasses. This seems often to be because the parents themselves have already worn glasses all their lives and consider that nothing better can be hoped for their children. There seems also to be a widespread belief in the uselessness of strabismus operation, apparently due to the non-success of the earlier methods of operating. If there is slight astigmatism and low refractive error, I advise that the patient should have an operation and leave off the glasses. If the refractive error is of a medium amount or higher, I tell the patient to wear the glasses outside when they experience the necessity for them, and to keep them as much as possible for near work. If the patient has been put straight by operation then glasses should not be necessary to keep him straight.

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THE TREATMENT OF CASES OF SYPHILIS HAVING A PERSISTENT POSITIVE WASSERMANN REACTION.

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CASES of syphilis with a positive Wassermann reaction persisting in spite of treatment may be provisionally divided into two categories: (1) those in which clinical symptoms also persist or continue to recur; (2) those in which the positive reaction is the only sign, clinical symptoms having been absent for some considerable time. It is obvious that cases belonging to the first category require further treatment; but the procedure to adopt in cases belonging to the second category is not so easy to decide.

In the present state of our knowledge this question cannot be decided by statistics, for the Wassermann reaction is of too recent introduction for us to know the ultimate fate of such cases. We do not yet know how long the reaction may remain positive, nor whether it tends to become negative after a lapse of time. Nor do we yet know whether it is these cases with persistent positive reactions which ultimately develop tabes, general paralysis, and other late manifestations. To decide this question we should require statistics of the Wassermann reaction 10 or 20 years hence in patients who have been treated during the last 10 years. All we know at present is that the reaction may remain positive in spite of repeated and intensive courses of treatment, and also that it may become negative in the absence of treatment.

Cause of Reaction—Generally Accepted View.

The advisability or not of giving further treatment to cases with a persistent positive reaction, but no clinical symptoms, depends upon the real nature and significance of the reaction itself, and whether a positive reaction always indicates the presence of living spirochætes or not. The view now generally accepted is that the reaction is caused by substances of histogenetic (katabolic) and not microbial origin, and it is not inconceivable that these substances may continue to be formed for some time after the death of the spirochætes which originally gave rise to their formation. If a patient with a persistent reaction could be reinfected with syphilis, this would decide the question; because, for true reinfection (as distinguished from superinfection) to take place all the spirochætes of the first infection must be dead. So far as we know, no such case has been recorded; as a rule, recent blood tests have not been made in cases of true reinfection.

Problem of Persistent Positive Reaction.

If a positive reaction always signifies active spirochætosis further treatment is evidently indicated, but if it may be due to the continued formation of katabolic tissue products in the absence of spirochætes further treatment is obviously contra-indicated, if no symptoms are present. Assuming that the first interpretation of the reaction is correct, when the reaction remains positive in spite of repetition of the same courses of treatment, it would appear advisable to change the therapeutic methods. The majority of cases with persistent positive reactions, including most of those in the table opposite, have been treated with the usual courses consisting of intravenous injection of arsenical compounds and intramuscular injection of mercurial cream. This method is strong in arsenic but rather weak in mercury. It would be interesting to find whether an increase in the intensity of the mercurial factor would reduce the number of persistent reactions.

Effect of Sulphur.

The effect of sulphur is another point worthy of investigation. Sulphur, which was formerly much used in the treatment of syphilis, has lately fallen into disuse, but has been revived by McDonagh in the form of intramine. Case 10 in our table is suggestive in this connexion. This patient had been treated with two courses of intravenous injections of neosalvarsan and mercury. When seen by us there were no signs of syphilis, but the reaction was found to be strongly positive. Further treatment by mercury and iodides was not tolerated. Sulphur was then given, and the reaction is now negative. Although it is impossible to generalise from a single case, the administration of sulphur in these cases seems worth a trial.

Conclusions.

1. We are of opinion that the possibility of the Wassermann reaction remaining positive in the absence of active spirochætosis has not yet been disproved. But, as it is equally impossible to disprove the contrary hypothesis, it is best in actual practice to regard a patient with a persistent positive reaction as one who is not definitely cured and as a subject for further observation and possibly further treatment.

2. We consider that a persistent positive reaction is not, by itself, sufficient evidence to decide the question of further treatment, and that we should be guided equally by the clinical progress of the case, the nature of the former symptoms, and the intensity and duration of previous treatment. If clinical symptoms have been present comparatively recently (say, during the last 12 months), we hold that further treatment is advisable; but if symptoms have been absent for more than a year, that the advisability or not of further treatment should depend chiefly upon the clinical course of the case.

3. If further treatment is decided upon, we think that this should differ materially from that given previously. We suggest that sulphur should form part of this treatment without venturing on any hypothesis to explain its possible action.

Cases with Persistent + Reaction but no Symptoms.

No.	Stage of disease.	Treatment received.	W.R.	Remarks.
1	S.	Two courses.*	+	Recommended further treatment.
2	S.	Three ,,	+ + +	
3	T.	Two ,,	+	
4	T.	One course.	+ + + +	Disappeared.
5	T.	Treated 5 years ago; method unknown.	+	Receiving further treatment.
6	T.	One course.	+ + +	
7	T.	Two courses.	+	Disappeared.
8	T.	One course.	+	
9	T.	One course of galyl and mercury.	+ + + +	Before treatment reaction only +.
10	T.	Several intensive courses of neosalvarsan and mercury.	+ + + +	Treatment by mercury for short time.‡
11	T.	Treated 20 years ago with mercury.	+ + + +	Recommended further treatment.
12	C.	Two courses.	+ +	

* One course as a rule consisted of 1·5 g. N.A. B. and 6 gr. Hg.
‡ Then sulphur, after which reaction became negative.
+ = Weakly positive. + + = Positive. + + + = Strongly positive. + + + + = Very strongly positive.
S., secondary. T., tertiary. C., congenital.
The method used was that described by one of us (A. G. S.) in Marshall and Ffrench's "Syphilis and Venereal Diseases" (1921), wherein the complement was kept constant and the antigen varied.

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Clinical Notes:

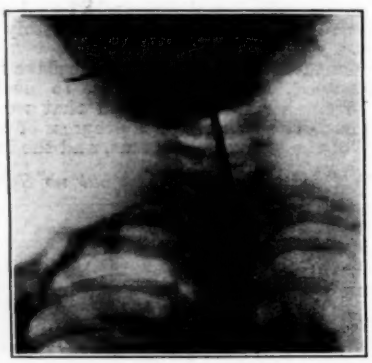
MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

AN UNUSUAL CASE OF A FOREIGN BODY IN THE ŒSOPHAGUS FOR NINE MONTHS.

By CHARLES H. CARROLL, M.R.C.S., L.R.C.P.LOND.

IN May, 1918, when house surgeon to the ear, nose, and throat department of the London Hospital, I was consulted by a woman who brought her baby boy, aged 15 months, to the hospital, suffering from what appeared to be a superficial ulcer on the neck, which she stated had existed for some considerable time past, healing and breaking down in turn. On examining the child's neck and removing the scab from the ulcer, I felt a "pin point" projecting through the centre of the wound.

The child was admitted for investigation of its condition and X ray examination, the result of which is disclosed in the accompanying X ray photo. The mother, on being shown the photo, at once said: "That is the safety-brooch



Radiogram showing safety-brooch in œsophagus.

which I gave baby nine months ago in his cot to play with, and it was lost." I had no doubt as to her statement being correct.

Under general anæsthesia, Mr. Norman Patterson, surgeon to the department, passed an œsophagoscope and cut the pin, distal to the joint; the portion projecting through the soft tissues of the neck was removed by that route and the major part through the œsophagoscope. The child was discharged home in a few days none the worse for its experience.

The pin, on examination, proved to be a brass safety-brooch with a flat bar; and the point of interest is the fact that a baby should be able to put up with so formidable a foreign body in its œsophagus for so long a time without any apparent symptoms of dysphagia or discomfort.

A CASE OF LOCKED TWINS.

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LOCKED twins is a very rare condition; Munro Kerr, in his "Operative Midwifery," states that V. Braun only found instances of two such cases in the 90,000 recorded at the Vienna clinic. Further, he states that knotting of the cords in twin pregnancy is also very rare, and illustrates this condition by a photograph of twin cords knotted twice; he says also that such knots lead to fœtal death. The following case is therefore of interest, as both these conditions were present at the same time and without fœtal death.

On April 25th last I was called to see Mrs. V., aged 23, primipara. Membranes ruptured during sleep 38 hours previously, and the midwife sent as "presentation not made out, fœtus passing meconium."

Abdominally.—Fundus was broad, too big to contain a head, too hard for a breech, no ballottement elicited; uterus tended to be moulded on fœtus; fœtal back to the left anterior; fœtal heart heard at level of umbilicus to the left and soft part made out engaged in the brim.

Per Vaginam, pelvis was full of a mass of "small parts" so tightly wedged together that examining fingers were unable to sweep around the mass. A knee was recognised, and after some force was used a foot was brought to the vulva; another foot was found then just inside and brought to the surface. No advance being made with the next pain, the fingers were again introduced, and to my astonishment found two more feet lying loose in the hollow of the sacrum, which followed my fingers to the vaginal orifice as I withdrew them. There were now four feet showing at the vulva, all moving voluntarily. One fœtus was now seen to be lying in the L.S.A. position and the other in the R.S.A. position. An attempt was made to push up the posterior fœtus, but this had to be given up as there was no upward movement. Traction was now made on legs of the anterior fœtus, the buttocks of the posterior being kept up by a hand inside vagina. The anterior fœtus moved downwards for about 6 inches and stopped; the cord was palpated and found

FIG. 1.—Presentation (diagrammatic) at first P.V. examination.

FIG. 2.—The fœtuses with the knotted cord. The uppermost knots being unravelled when fixing specimen for photographer.

pulseless and the arms were extended, these latter were now brought directly downwards, much force having to be used. The head now locked, chin on the symphysis of the other fœtus and occiput on the mother's pubis. By applying two fingers to back of neck and pushing in the direction of the sacrum and rotating the head backwards with a hand externally, the head passed the brim and delivery was effected. Cord being taut, was cut and clamped. Other child followed in 10 minutes—both were dead. Placenta came away 10 minutes later. There was no post-partum hæmorrhage and patient made an uneventful recovery.

Presentation.—"Locking" or impaction of twins due to descent of two breeches, is not described in the text-books. In this case there was clearly a double knee presentation (Fig. 1) and impaction resulting as both fœtuses entered the brim together. The cause of the fœtuses presenting together was evidently due to the shortening of the cords by the knotting. The liquor amnii having drained away for 38 hours caused the uterus to tend further to keep the fœtuses together during the first stage. The fœtal heads were much flattened on one side where they were in apposition. Uniovular twins, males, 17½ inches and 17 inches long; weight, 3 lb. 8 oz. and 3 lb. 6 oz., about 34 weeks maturity.

Cords.—The centres of both cords were looped, coiled, and knotted together into an elongated mass about 7 inches long, which lay at right-angles to the cords (Fig. 2). The cords show at least eight distinct knots, and at the free end of this mass are very tight. It is of interest that both fœtuses were alive before delivery, despite this condition.

I have to thank Mr. Leonard Phillips, obstetric surgeon to out-patients, Queen Charlotte's Hospital, for permission to publish this case. My thanks are also due to Mr. H. H. Gellert, house surgeon of the Samaritan Hospital, for his kindness in taking the accompanying photograph and to the district superintendent, Miss Rodmell, for her valuable assistance during the course of this case.

CASE OF ALUMINIUM POISONING.

By JOHN SPOFFORTH, L.R.C.P.EDIN., M.R.C.S.ENG.

I WAS recently called to see a man, aged 46, who was then employed at a firm of metalworkers. He was in a state of great exhaustion and suffering from very severe and persistent vomiting. The pulse was slow and irregular. I suspected metallic poisoning and later sent a specimen of his urine to Messrs. Thomas, Bourlet, and Newman, analytical chemists, who reported that it contained a large amount of aluminium, also of phosphates. The patient said that he had been dipping red-hot metal articles, contained in an aluminium holder, into concentrated nitric acid. Aluminium produces a rather slow intoxication. In this case it caused loss of memory, tremor, jerking movements and impaired coördination. There was also chronic constipation and incontinence of urine.

Richborough-road, Cricklewood, N.W.

A CASE OF RECKLINGHAUSEN'S DISEASE.

By F. McG. LOUGHNANE, F.R.C.S. ENG.,
HONORARY SURGEON, ST. MARY'S HOSPITAL, PLAISTOW.

THE patient, an Arab, I saw when in Mesopotamia. He had been found in a palm grove, where apparently he had been deserted; he said his age was 25 years, but he appeared to be about 50. His history was difficult to interpret accurately, but as far as one could gather he had had lumps on his body for as long as he could remember; no other member of his family or village had been similarly afflicted.

All over his trunk, limbs, and head he was covered with multiple tumours of molluscum fibrosum, varying in size from a small pin's head to a Victoria plum, with the exception of one exceedingly large tumour hanging from the right loin, which on removal weighed 70 lb. The skin covering the tumour was thick and corrugated, inflamed in some parts, ulcerated and septic in others. On palpation it felt more or less semi-solid, and a fluid thrill was present. The tumour was about the size of a small sheep, and when standing the patient carried it under his arm. The base of the pedicle, with the patient lying down and the tumour extended, was 14 inches broad. The general condition of the patient was poor: he had a temperature of 101° F., was very emaciated and obviously suffering from toxæmia. He was kept under treatment for a few days so that he might withstand an operation with greater safety, but as he showed no improvement I decided to operate at once, hoping his life would be saved by the removal of a great source of toxæmia, and to fit him to earn a living instead of being dependent on the chance alms of a casual passer-by.

Chloroform anæsthesia was given by Captain W. H. Dye, and I was assisted at the operation by Captain A. J. McDonnell. An hour previous to the operation patient had been given a rectal saline with brandy. A separate table was required for the tumour to rest on. The operation was rather prolonged, 70 minutes, which was unavoidable for two reasons—first, the tumour had dragged into itself a portion of the abdominal wall, which here was very thin, necessitating careful separation to avoid opening into the peritoneal cavity, for the separating muscle layer was almost non-existent; and secondly, there was a great risk of hæmorrhage, so the vessels had to be identified before division. The tumour was very vascular. There were a large number of vessels running irregularly through the pedicle, and many of the veins were the size of the average common femoral vein. Despite all precautions there was a fair amount of hæmorrhage, though not more than occurs in many a breast operation. Patient collapsed towards the end of the operation, and saline was given intravenously and subcutaneously, but he died two hours later.

The patient standing, showing the large tumour amputated from patient's side and several smaller tumours on body and limbs.

On cutting open the tumour later it was seen to consist of a large amount of fat, running through which fairly large nerve strands were clearly visible. The vessels, especially the veins, were large and numerous. In places the tumour was pulpy and undergoing degeneration. Suppuration had extended some inches deep to the ulcerated areas.

Death was due to three causes: (1) Debilitated condition of the patient, (2) shock, and (3) hæmorrhage, not free, but in the amount of blood necessarily withdrawn from the body by removal of a tumour weighing 5 stones.

Remarks.

The question of shock is an interesting one, for it is well known that the nearer to the trunk a limb is amputated the greater the shock, due to the fact that large nerve trunks and vessels are implicated. In this case an exceedingly large tumour was amputated from the trunk itself, a tumour both very vascular and certainly containing a very large amount of nerve tissue.

The same patient in resting position.

For the accompanying photographs I am indebted to Captain McDonnell for the negatives, and to Captain C. G. Whorlow for the prints.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF LARYNGOLOGY.

THE summer meeting of this Section of the Royal Society of Medicine was held on June 2nd and 3rd, Dr. W. JOBSON HORNE occupying the chair.

Complete Tonsillectomy as a Routine Operation.

Mr. MARK HOVELL read a paper on this subject. He said that during the last few years the practice had sprung up of systematically enucleating all tonsils which were found to be enlarged, quite irrespective of the cause of such enlargement; hence the mere slicing of a portion of the redundant tonsil, leaving the remainder behind, had been largely criticised and regarded as an incomplete procedure. He reminded members that not every enlarged tonsil was diseased; in children especially such hypertrophy was a result of nasal obstruction, and when free nasal respiration had been restored the tonsillar tissue contracted again. Therefore, he contended that in such cases removal of the projecting portion of tonsil while exerting counter-pressure from outside and the application of astringents was all that was needed. He criticised the habit of rapid operating under nitrous oxide gas, no attempt being made to ascertain the condition of the posterior extremity of the inferior turbinate body. In deciding to stitch the pillars of the fauces it should be remembered that the movements of the soft palate were thereby curtailed. Hæmorrhage, also, after complete enucleation, might be very serious, and he knew of several deaths from it, and the later singing voice was liable to be jeopardised by the radical procedure.—Dr. D. AITKEN confirmed Mr. Hovell's contentions, especially concerning the bad effect on the voice following the complete enucleation.—Mr. W. ROSE took the opposite view to Mr. Hovell's, urging the complete operation. Not merely was the partial operation inadequate, in his opinion, but in some cases its performance had been the starting-point of repeated attacks of tonsillitis. He agreed that the scarring following tonsillectomy in some cases resulted in impairment of the voice.

Mr. JEFFERSON FAULDER did not agree that mere enlargement of tonsil had been regarded as an indication for total removal. When there was mere enlargement, with no other symptom, it sufficed to remove the enlargement. He quoted an intimate case in which partial procedures led to a long course of trouble and inconvenience.—Sir WILLIAM MILLIGAN said he regarded a hypertrophied tonsil as a diseased one, and septic tonsils should be subjected to complete tonsillectomy, to entirely get rid of the crypts. By mere tonsillotomy the crypts were all opened up and were the ready receptacles of septic and other foreign material from the mouth. Before any slicing procedure, the condition of the mouth, especially the teeth, should be investigated. He deprecated hurry in the operation. He did not remember more than three of his cases in which suture had had to be performed.—Mr. WRIGHT (Bristol) said cases in which removal of tonsils was necessary could be divided into two classes: (1) those in which the tonsils were freely movable on the pharyngeal wall, in which the complete removal could be done as easily and be as free from risk as taking away a portion; (2) those in which the tonsil was adherent to the pharyngeal wall owing to recurring attacks of peritonsillar inflammation. Though more difficult in these, the complete operation was the only reasonable one.—Mr. W. STUART-LOW took the opposite view to Mr. Hovell, and deprecated the public being led to believe that partial operation or medical measures sufficed.—Mr. F. H. DIGGLE agreed with what Sir William Milligan had said. He referred to his histological investigations of removed tonsils, and said he found in 75 cases five were definitely tuberculous. He knew no means of distinguishing these from ordinary chronic enlargements, for the five tuberculous cases had no enlarged glands. The tonsillar operation should be as thorough as any other surgical procedure.—Mr. J. F. O'MALLEY was also an advocate for complete removal, for none were called upon to operate on tonsils which were healthy. The larger number of cases of fatal or alarming hæmorrhage in the last 60 years occurred in the period when tonsillotomy was the chief operation; hæmorrhage was held by some to be more likely when a part of the tissue was left.—Dr. BURGER (Amsterdam) said he had recommended and carried out tonsillectomy as the general operation for children. With regard to mortality, there was always a tendency for operators to report their best cases. For tonsillotomy he did not consider a general anæsthetic was needed in the case of children.—Mr. DOUGLAS GUTHRIE referred to the class of case in which the enlargement wholly projected and there was no buried portion. For these not numerous cases tonsillotomy sufficed.—Mr. HERBERT TILLEY said he never used a guillotine for tonsils; he always did enucleation and dissection, and he agreed with Sir William Milligan.—Mr. HORGAN said he used the guillotine, and that the scarring left after operations on the tonsil was due to over-instrumentation. He referred to the valuable work on the pathology of the tonsils by Mitchell, of Edinburgh.—Mr. SYME agreed with Sir William Milligan, and said there was need for a more exact diagnosis of these conditions, to determine which should be removed and which could safely be left, hoping for a return to a normal size.—The PRESIDENT thought the trend of the discussion had shown that a tonsillar case should either be left alone or tonsillectomy carried out. There was much to be said for that. Mere size of tonsil was not an indication for operation; the largest tonsil he had ever seen was in a man who made no complaint about himself; he had brought somebody else for treatment! If coincidently with enlarged tonsils cervical glands were palpable, that was an indication for removing the tonsil.—Mr. HOVELL replied.

Operations on the Frontal Sinus.

Mr. WALTER HOWARTH read a paper on this subject, remarking that only recently had thorough operations on the sinus become established, hence no single operation had become stereotyped. He believed the experience of an individual, if his cases were numerous enough, was a more valuable criterion than that of a group of operators. He had dealt with over 200 frontal sinus cases. He regarded the ethmoid as the key to the frontal sinus. With regard to the intranasal operation, the fronto-nasal duct could be enlarged so that it would admit the passage of a No. 15 bougie, and it was effected by removing the spur of bone which projected from the nasal process of the frontal bone. The opening could be maintained long enough to ensure a permanent cure of the sinus suppuration in a large number of cases. The more acute the stage, the more was the intranasal operation likely to be successful. In reference to the external operation, he said the Killian—which he did not perform—was founded on the fallacy that it was possible to completely obliterate the frontal sinus. Complicated sinuses were common, and the Killian operation was apt to leave dead spaces behind the bridge, along the ethmoid and elsewhere, which prevented satisfactory healing and might be a source of future danger. But why try to obliterate the cavity when it could be drained? The procedure he had adopted for eight years was to open the sinus just above the lacrymal groove and remove the floor, disturbing the mucous membrane as little as possible. He next dealt with the ethmoid, all the anterior cells being removed; this cavity was then joined to the frontal sinus by cutting through the ascending process of the superior maxilla and the nasal process of the frontal bone. There was no alteration in contour as a result of this, and the scar was so fine as to be almost invisible. It was a safe operation, as

he had not lost a case, and he never regretted the day he had embarked on it.—Mr. HERBERT TILLEY said he had not done the Killian operation for six or seven years. Failure in so many operations on the frontal sinus was due to the fact that the operator so often overlooked the fact that an outlying orbito-ethmoidal cell was leaking into the floor of the frontal sinus, and what had been regarded as the floor of the sinus was really the roof of the orbito-ethmoidal cells.—Several other members took part in the discussion.

Site of Origin of Intrinsic Laryngeal Cancer.

Sir STCLAIR THOMSON read a contribution entitled "The Usual Site of Origin of Intrinsic Cancer of the Larynx as demonstrated at 50 Laryngo-Fissures." The series showed that malignant disease exhibited no preference for the posterior part of the vocal cord, although it had been so stated in text-books. The invasion of the neoplasm in the 50 cases was as follows:—

Limited to anterior third of cord	..	3 cases.
,, middle third	.. ..	7 ,,
,, posterior cord	.. ..	0 ,,
,, anterior and middle together		16 ,,
,, middle and posterior together		3 ,,
Occupying the whole cord	.. ..	21 ,,

Expressed another way, the cancer invaded the anterior third in 39 cases, the middle third in 47 cases, the posterior third in 24. The growth was in the subglottic area in 13 of the cases, and more than 50 per cent. of the subglottic cases had died of recurrence. In every case, however limited the growth might be, the entire vocal cord should be excised.—The paper was discussed, and Sir STCLAIR THOMSON replied.

Paralysis of Vocal Cords in Cases of Malignant Breast Tumours.

Dr. LOGAN TURNER (Edinburgh) submitted an interesting contribution on this subject, based upon six cases he had seen in the last 12 years. Three were married women, three unmarried, and they were first seen for hoarseness, which had developed at varying periods after breast amputation for malignant disease, the average period between the two events having been 3½ years. In none of the cases had there been operation on the cervical glands, the question of trauma did not therefore arise. Two of them were cases of contralateral paralysis—i.e., the cord on the opposite side to that of the breast cancer was paralysed. By means of an epidiascopic demonstration he showed the mechanism of causation.

Diathermy in Inoperable Cancer.

Sir WILLIAM MILLIGAN gave a contribution on diathermy in inoperable pharyngeal and epi-laryngeal malignancy, its objectives and limitations, with a review of cases. He said that during six years he had made use of diathermy in even inoperable cases of malignant disease in the floor of the mouth, the tongue, the faucial pillars, the sinus pyriformis, and even in the hypo-pharynx. He found that in inoperable cases diathermy placed the patient in a much more comfortable condition than would otherwise have been the case; he did not suggest there was anything like lasting cure, but the destruction of the local lesion and the clearing up of sepsis rendered the patients' last days infinitely more endurable than if nothing of the kind had been done. Sometimes a secondary deposit also was amenable to diathermy treatment. He proceeded to discuss the technique of the operation in different conditions and the strength of current needed, and to give particulars of patients treated. The method was available for surgically operable cases also.—The contribution was fully discussed.

Dr. IRWIN MOORE read a paper on Eversion of the Sacculus Laryngis, and showed a number of illustrative slides. The matter has been before the Section on a previous occasion recently.

The Ventricle-Stripping Operation for Cord Paralysis.

Prof. F. HOBDAY read a paper setting forth his experience in 2000 operations on horses with paralysis of the vocal cord—manifested in "roaring"—by stripping the membrane from the ventricle of Morgagni, and suggesting that the operation was applicable to the human subject suffering from similar paralysis. He exhibited specimens to support his thesis.—Mr. TILLEY, Mr. M. E. VLASTO, Mr. S. B. WORTHINGTON, Mr. J. F. O'MALLEY, and the PRESIDENT discussed the paper and emphasised the differences between the human and equine larynges, and Prof. HOBDAY replied to the various criticisms.

Bronchoscopy in the Treatment of Asthma.

Mr. SYME submitted a contribution on the treatment of asthma by bronchoscopy and the use of a 10 per cent. solution of silver nitrate when the correction of nasal trouble or accessory sinus disease did not produce a lasting result on the asthma. He hesitated to use the word "cure" in severe cases, in which there were changes in the lung tissue, but in 12 such the benefit had been so decided as to enable the patients to resume their usual life, and he thought the results justified his reporting the method to the Section.—The paper was discussed.

In the afternoon Dr. REGINALD MORTON exhibited some recent developments in X ray treatment for laryngeal cases. Mr. G. T. MULLALLY showed the technique of blood transfusion, and Mr. T. B. LAYTON demonstrated some specimens from the recently acquired collection of the late Prof. Onodi, of Vienna.

Later in the afternoon the usual clinical meeting was held, when about a dozen cases were exhibited and discussed. In the evening members and visitors dined together.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

AT a meeting of this society held on June 3rd, at 11, Chandos-street, and presided over by Prof. W. J. R. SIMPSON, a paper was read by Lieut.-Col. H. KIRKPATRICK, I.M.S., entitled

Some Points Concerning Trachoma.

His subject called for little introduction, for the disease was well known as one of the chief causes of blindness in both Near and Far East, and for its association with bad hygiene and dirt. It was undoubtedly very infectious, and its spread was favoured by the harmful effects of dust and glare of the East, where among Mahomedans the use in common of the henna pot as a cosmetic was a fertile source of infection. Flies, though occasionally responsible for its conveyance, were not now regarded as an important factor. Following the Napoleonic wars England shared in the wave of infection which spread over Western Europe at the beginning of the last century, since when it had disappeared and was now rare in the British Isles, with the exception of parts of Ireland, where it still persisted, and when seen in England is chiefly confined to immigrants from the East. Colonel Kirkpatrick described trachoma as a specific and infectious inflammation of the conjunctiva, chronic in type and characterised by the formation in the membrane of follicles and papillæ, resulting in cicatrisation. He gave a detailed account of the structure of the conjunctival membrane and the anatomical relations of its three parts, the tarsal or palpebral, the fornical or transitional, and the bulbar. Reference was made to the normal development of papillæ in the tarsal portion and their inflammatory overgrowth in the early stage of trachoma. He described fully the pathology of the characteristic changes occurring in the conjunctiva—the general round-cell infiltration of the deeper layer and varying degree of vascular engorgement, together with the formation of pseudo-papillæ, tubular depressions of epithelium, and occlusion cysts. In particular the growth of the follicle was regarded as the striking feature of trachoma, composed of central large connective-tissue cells and peripheral zone of small lymphocytes in a stroma continuous with the connective tissue of the surrounding conjunctiva. The later stages of the follicles

resulted in inflammatory cicatrisation and consequent deformity of the tarsus of the lid, leading to the sinuous outline of the free margin. Pannus due to cell invasion and vascularisation of the superficial layers of the cornea was of common occurrence. No organism had yet been discovered as the specific cause of trachoma, although many had been described.

Signs and Symptoms.

The lecturer proceeded to discuss in detail the symptoms and signs of the disease, which he divided into three stages: (1) An early or florid stage with formation of the characteristic follicles and papillæ; (2) a middle or cicatricial stage; (3) a late stage in which advanced cicatrisation of the conjunctiva with marked changes in the tarsus and cornea became evident. All stages tended to merge into one another. Ptosis, owing to inflammatory involvement of the insertion of the levator palpebræ, was commonly to be observed in the early stage. Vascularisation of the cornea, or pannus, generally developed during the middle stage, when all signs of the disease became more accentuated with the gradual network development of fibrous tissue in the conjunctival membrane, and the appearance of retention cysts. The formation of follicles in excess, giving rise to a pale yellow gelatinous mass on the tarsus, was known as Stellway's gelatinous trachoma. With continued cicatrisation and degeneration in the tarsal plate during the third stage, marked irregularity and deformity of the lids occurred and resulted in entropion, increasing pannus, and ulceration of the cornea, both much aggravated by trichiasis. Finally, following on the deposition of kerato-hyaline, the eye became dry, in the state known as xerophthalmia, the cornea more and more opaque, and total blindness eventually set in. The diagnosis of trachoma previous to the onset of the cicatricial stages was often a problem of great difficulty and called for differentiation particularly from follicular conjunctivitis, spring catarrh, and a chronic form of purulent conjunctivitis. During the early stages of trachoma the signs of most value were the presence of ptosis, the early occurrence of pannus in the upper part of the cornea, and, the situation of the trachoma follicles, best marked along the upper, or convex, margin of the superior tarsus, spreading upwards to the fold of the fornix and downwards on to the conjunctiva covering the tarsus, but much less evident in the lower fornix and conjunctiva of the lower lid. Colonel Kirkpatrick gave graphic details as to the differential diagnosis of the three conditions, above mentioned, for which trachoma was liable to be mistaken. In the treatment of the disease the first essential was the prevention of its spread by segregation of infected persons, the provision of separate basins and towels for each patient, the observance of proper precautions for cleansing the eyes, and the correct disposal of cloths soiled by conjunctival discharge.

Treatment.

In regard to treatment, the lecturer observed that it should aim at promoting the disappearance of the follicles without causing an excessive amount of fibrous tissue; the former was effected by Nature, in course of time, but by means of cicatrisation, which led to the serious complications and sequelæ, and it was to overcome these that every effort, whether medicinal or operative, should be directed. In the treatment of the first stage nitrate of silver in solutions varying from 5 to 60 grains to the ounce, but preferably 10 grains, or copper sulphate, applied in the form of a stick, were most in favour as medicinal applications to the affected areas of the conjunctiva; and these were best exposed by ballooning the fornix with a subconjunctival injection of sterile normal saline, including 4 minims of 4 per cent. solution of cocaine and 4 minims of adrenalin. The obstinate character of trachoma necessitated treatment, even in the first stage, over a period of some months, if the danger of relapse was to be avoided. More radical measures were occasionally advisable to afford more rapid relief, and for this purpose the operation of excision of the transitional portion of the conjunctiva, after ballooning with a local anæsthetic, was advocated and described in detail. In dealing with the second stage of the disease medicinal treatment was likely to be of little avail, and the adoption of operative measures was distinctly indicated, the most satisfactory being the combined excision of fornix and tarsus as described by Heisrath. A full and comprehensive account of this particular operation was given and illustrated by drawings thrown on the screen from the epidiascope. Following on the excision there was some reaction lasting about 36 hours, but it was possible to remove the stitches from the sutured conjunctiva and to commence painting with silver nitrate at the end of the first week. In the third stage of trachoma the membrane had undergone so much shrinkage that little of the fornix remained, but much benefit was to be derived from excision of the diseased tarsus, the possible reservoir of infection. The treatment of such complications as trichiasis and pannus, the latter occasionally by peritomy, and corneal ulceration by the use of scarlet R, 2 per cent. in olive oil, were called for in the third stage. The use of dionine for promoting absorption of corneal opacities, and instillation of 5 per cent. infusion of crushed jequirity seeds for the relief of pannus were mentioned as of considerable value. The trachomatous conjunctiva was especially liable to, and necessitated constant watch against, secondary infections—e.g., by the bacilli of Morax-Axenfeld and Koch-Weekes, calling for the use of sulphate of zinc drops and silver nitrate respectively. In gonococcal and particularly streptococcal infections, eye-baths of saturated magnesium sulphate solution were most useful remedies.

In conclusion, Colonel Kirkpatrick emphasised the following points: (1) that trachoma was not a single disease entity; (2) that the causes of the characteristic conjunctival changes might vary widely in different cases; (3) the importance of guarding against secondary infections; (4) the difficulty of diagnosis, as no causative organism had yet been established in trachoma.

Experiences with Chinese Labourers in France.

After opening remarks from the PRESIDENT, Dr. A. G. BAGSHAWE, the honorary secretary of the Society, read a letter from Dr. C. F. HARFORD, as the latter's contribution to the discussion. Dr. Harford quoted some of his experiences with Chinese labourers in France during 1917 and 1918 in order to show the great importance of trachoma from the epidemiological point of view, and the difficulties of diagnosis owing to the absence of any definite pathological test which could be applied to the disease. On a great ammunition dump at Dannes, where he was in medical charge of South African natives, two companies of Chinese were brought in who had been classified on their entry to France as "Trachoma Companies" and "Conjunctivitis Companies" respectively. Obviously, this was only a rough classification by which it was sought to segregate in the first class all who were potentially trachomatous, doubtful cases being collected in the second class. He had been asked to see some of the more acute cases taken from these companies on their first arrival at Dannes, and found it difficult to distinguish well-marked cases of trachoma. The more severe appeared to be similar to cases of muco-purulent conjunctivitis as seen in England with a red velvety conjunctiva covering sometimes irregular nodules. Later on at Havre he was called upon to inspect Chinese companies which had been classified as clean from the point of view of trachoma; even in these there was a distinct tendency to conjunctival irritation with a certain proportion of more serious cases. He attributed this to the lax eyelids of the Chinese and uncleanly habits. He contended that the object-lesson thus afforded during the war of the prevalence of contagious eye disease, and the difficulties of diagnosis, should lead to renewed inquiries both by the administrative and medical authorities in countries where these conditions were prevalent.

Lieut.-Colonel R. H. ELLIOT stated his emphatic belief that trachoma was responsible for more blindness in India, Persia, Afghanistan, and China than all other eye conditions put together; and he maintained that nothing like enough was being done by the Government to realise the necessity of grappling with the problem, especially in the earlier stages. For trachoma, if treated properly from the start, should never cause blindness. He heartily agreed with Colonel Kirkpatrick on two important points he had discussed: firstly, as to the great value of magnesium sulphate treatment of the conjunctiva; secondly, as to the ballooning of the conjunctiva, which had proved a most useful manœuvre both for diagnosis and treatment.

Colonel S. P. JAMES inquired if Colonel Kirkpatrick from his experience did not consider it important that trachoma should be made compulsorily notifiable in England.—Lieut.-Colonel KIRKPATRICK agreed as to the necessity that the condition ought to be notifiable as an infectious disease; and Lieut.-Colonel ELLIOT advocated a further step—namely, that all doubtful cases should be notified, whether definitely diagnosed as trachoma or not.

An Early Portuguese Contribution to Tropical Medicine, by Dr. CARLOS FRANÇA, Collares, Portugal, which had been translated by Professor Clifford Dobell, was submitted in the translator's absence by Dr. BAGSHAWE for publication in the Society's Transactions. The subject was of considerable interest in the history of medicine, dealing as it did with the first mention of some of the tropical diseases, ascribed to certain Portuguese physicians in the sixteenth and seventeenth centuries. The references included an account of cholera, by Garcia da Orta (1583); of yellow fever, by Ferreira da Rosa (1694); also descriptions by travellers, who were not medical men; of scurvy, by Joao de Barros (1552); of the cholera epidemic of 1543, by Gaspar Correia; and of *Dermatophilus penetrans*, in the production of what is now commonly known as "Chiggers," by Gaspar Affonso (1596). Mention was also made of a work of the sixteenth century containing a clear account of the part played by insects in the transmission of frambœsia tropica (yaws), written by Gabriel de Souza, a Portuguese colonist of Brazil, in 1587. The account given by this shrewd observer of the sixteenth century had waited over three centuries for verification by the work of Castellani, who in 1907 demonstrated experimentally that the house fly (*Musca domestica*) could transmit the spirillum, *Treponema pertenue*, of yaws. It was rightly claimed, therefore, that the name of Gabriel de Souza was one which should henceforth figure in the history of Tropical Medicine.

TUBERCULOSIS SOCIETY.

A MEETING of this Society was held on June 6th at the Margaret Street Hospital for Consumption, London, when a paper was read by Dr. NATHAN RAW, M.P., President of the Society, on

What we do NOT *Know regarding Tuberculosis.*

He said that in spite of an enormous amount of research work by many of the greatest clinicians and scientists of the day there still remained great uncertainty and lack of knowledge on several fundamental and crucial points. Tubercle bacilli were divided into three types, originally all of a common species—human, bovine, and avian. The avian did not infect man and so could be disregarded. Just as the bacilli of tetanus and dysentery selected special organs, so the human and bovine tubercle bacilli attacked different parts of the human body. Speaking generally, Dr. Raw said that the human bacilli attacked the lungs and larynx, whereas the bovine attacked the alimentary system and the lymphatic glands. How and at what exact time a person became infected with pulmonary tuberculosis was still a matter of uncertainty, and how long the bacilli had the power to remain latent before acute symptoms developed was still unknown. The period of adolescence was undoubtedly a critical period and one in which the infection was stimulated to activity. Pulmonary tuberculosis was caused by the human bacillus in 90 per cent. of cases and was always primary. The remaining 10 per cent. were secondary to a primary infection by the bovine bacillus and were either an extension from the cervical glands downwards to the apex or an extension upwards from the abdomen to the bronchial glands. The problem of the bronchial glands was still unsolved, and whether or not the bacilli live and flourish in the blood stream was still a matter of controversy. Diathesis played an important part in predisposition to tuberculosis, and gouty people were much less susceptible than those of the diabetic diathesis. Tubercle bacilli varied greatly in virulence and to-day their virulence appeared to be much less than it was 50 years ago. The amount of individual resistance to attack and the degree of inherited tendency were still matters of uncertainty. Nomadic tribes were relatively free from tuberculosis, whereas civilised nations were more susceptible; and hence tuberculosis was really a disease of civilisation. Dr. Raw said that introduced into a primitive race it rapidly decimated the population, as this population had neither immunity nor resistance. How did civilised peoples become more or less immune to infection? Probably because the majority were infected with small doses which protect them against a more massive infection. Only a small proportion of married couples were infected, and this fact might be ascribed to the non-infected mate becoming immunised by contact with the infected mate. There was a strong antagonism between the human and bovine types of the tubercle bacillus, and it had never been found possible to distinguish the two types in the same body. If the body were attacked by the human type and exposed afterwards to the bovine, the latter was incapable of causing infection. Calmette had shown also that it was possible to protect calves and other animals by using attenuated bacilli of the same type. How was infection produced and how long might it remain latent? The difficulties which arose when we attempted to answer these and other questions showed how little indeed we *do* know regarding tuberculosis and how much yet remained for research to accomplish.

Discussion.

Dr. H. B. GIBBINS remarked on the improvement shown by many women suffering from tuberculosis during pregnancy, for which improvement no adequate reason had been adduced, and on the fact that so few cases of the disease showed physical signs of excavitation.

Dr. A. SANDISON commented on the association of the colour of the hair with disease and noted that red hair was more commonly met with in the rheumatic diathesis, and black hair in the tuberculous. Such association might be a matter of considerable importance in prognosis, to which aspect of the problem he thought too little attention was paid in general; the psychology of the patient, his susceptibility to the influence of suggestion in treatment, had also been unduly neglected.

Dr. F. HERNAMAN-JOHNSON stated that, so far as the X rays showed, pulmonary tuberculosis always appeared to begin in the hilus glands and to spread therefrom, bandwise or fanwise, towards the apex, which might or might not show signs of being affected. A pure apical tuberculosis was never found without definite signs at the root, though the connexion between them might not, however, be very obvious.

Dr. HENRY A. ELLIS called attention to the difference in prognosis between man and woman. The proportion of deaths in man grew greater as age increased, whereas the death-rate in woman was highest between the ages of 15 to 25. In regard to the question of immunity he pointed out that, if cases were injected with tuberculin in the pre-tuberculous stage, tuberculosis would not develop in them.

Dr. CAMPBELL MCCLURE considered that one of the most hopeful signs of the times was the tendency to leave theory alone and to concentrate on the tabula-

tion of large series of cases. Two most important questions were (1) diathesis; and (2) the low death-rate from the disease compared with the high incidence-rate.

Dr. JOHN SORLEY thought that some of those who held views on the production of immunity by small infecting doses did not always have the courage of their convictions and put these views into practice. It might be possible to produce immunity by administering small doses of living bovine bacilli to children in milk, but one could not guarantee that disaster might not result, and parents were not likely to offer their children for experimentation in view of this uncertainty.

Dr. ELLIS showed the upper lobe of the lung of a lion which had died of pulmonary tuberculosis. The whole lobe was one large cavity. The specimen was obtained from the Zoological Gardens through the kindness of Dr. C. F. Sonntag.

Reviews and Notices of Books.

DIATHERMY.

Its Production and Uses in Medicine and Surgery. By ELKIN P. CUMBERBATCH, M.A., B.M. Oxon., M.R.C.P. London: Wm. Heinemann (Medical Books), Ltd. 1921. 44 illustrations. Pp. 193. 21*s*.

THE author takes the trouble at the outset to explain the term diathermy, which means the "through heating" which occurs on the passage through the body of an electric current of special kind. A brief history of the way in which these currents came into use is followed by the technical features which distinguish both their production and their application to the body in conditions of disease.

The subject is a comparatively new one; the first diathermy machine for medical use was introduced into this country by the late Dr. Lewis Jones in 1909. Dr. Cumberbatch's work on diathermy is well known to those conversant with the subject; the author's particular studies on the rise in temperature of various parts of the body traversed by diathermic currents form the subject-matter of Chapter VI.; they will repay careful perusal, for they are well-planned experiments. Further experimental work by Dr. Cumberbatch upon physiological lines—for example, the effect of diathermy upon blood pressure, pulse-rate, and respiratory exchange—paves the way for an appreciation of the medical possibilities of this special form of electric current. One of the most striking features of electrical currents, which alternate with great frequency, is their inability to stimulate the excitable tissues. Until quite recently no explanation of this has been offered, but researches upon this phenomenon have now shown that the power of an electric current to stimulate the excitable tissues depends both upon the strength of the current and upon its duration; if the latter falls below a certain critical value the current loses altogether the power of excitation. The diathermic currents flow for less than this critical period of time before they reverse and therefore have no stimulating action; the sensation of warmth which is felt is due to the actual generation of heat within the tissues by these currents. The body can tolerate sufficiently large currents of this kind to allow of a very considerable rise of temperature; herein lies the possibility of surgical applications of these currents, discussion of which forms the concluding chapter of the volume.

The book is an excellent one. The subject is dealt with in a thoroughly scientific manner, the descriptions of the various types of diathermy machines at present in use are brief but lucid; the author has a scrupulous regard for exactness in every detail of his subject. On p. 16 an inversion of sentences occurs which the author will doubtless correct in future editions. The book is illustrated with line drawings and plates which enhance but do not over-balance the letterpress.

OBSTETRICAL AND GYNÆCOLOGICAL MONOGRAPHS.

Pelvic Inflammation in Women. By JOHN OSBORN POLAK, M.Sc., M.D., F.A.C.S., Professor of Obstetrics and Gynæcology, Long Island College Hospital, &c. London and New York: D. Appleton and Co. 1921. With 2 coloured plates and 88 illustrations. Pp. 229. £1 1*s*.

THIS monograph deals with the large group of diseases peculiar to women which result from septic, gonorrhœal, and tuberculous infections, and an attempt has been made to give the accepted pathology, a definite clinical picture, and the treatment. Dr. Polak uses the term pelvic inflammation in the wide sense, since he deals with this condition as it affects all parts of the genital tract. The book contains a great deal that is interesting. The author has a very profound belief in the prevalence of gonorrhœa in the female, and considers it a potent cause of pelvic inflammation and of one child sterility. He quotes the well-known figures of Nöggerath, the accuracy of which we are inclined to doubt. However, as is well known, the proof is difficult to obtain owing to the rapid disappearance of the gonococcus in these cases. Dr. Polak maintains that pyogenic cocci not infrequently persist in the prostate of men who have had gonorrhœa, and that in some cases they are the cause of infection in their wives. Considerable stress is laid upon the frequency of gonorrhœal infection of the mucosa of the cervix, and its treatment by a cone-shaped excision of the affected area is recommended in bad cases.

The chapter dealing with gonorrhœal infection is a very good one, and in the section on treatment great stress is laid on the importance of preventing the upward spread of the disease. In discussing the treatment of cases of puerperal infection the author strongly maintains that local interference is practically always contra-indicated and entirely condemns manual manipulations within the uterus or the use of the curette. In dealing with cases of puerperal pyæmia and general puerperal infection, treatment by sunlight, food, fresh air, repeated small blood transfusions, and general supportive stimulation is advised. Dr. Polak believes that by the repeated transfusions of small quantities—300–500 c.cm.—of citrated blood it is possible to lessen the secondary anæmia, to increase the number of active leucocytes, and to raise the blood pressure. Reliance is also placed on postural drainage by Fowler's position, proctoclysis, posterior colpotomy, and packing the pelvic cavity with gauze after the method introduced by Pryor. In the radical treatment of cases of salpingitis it is urged that no operative procedure should be undertaken until all acute symptoms have subsided. The case is tested by a blood count and a thorough bimanual pelvic examination. If after this the temperature and the leucocytes are not raised the operation may be performed with safety. Four very interesting cases are quoted in this chapter, in which the streptococcus lay latent in a parametrial exudate for periods varying from five to 15 years, and then gave birth to a general infection. In removing infected tubes Dr. Polak recommends the procedure by which a wedge-shaped portion of the fundus of the uterus, including the pars interstitialis, is resected. Resection of the ovary on general principles, in his opinion, should be discouraged.

Dr. Polak's book is interesting and valuable, and contains a great deal of information based on sound principles and on a wide experience.

Cæsarean Section. By FRANKLIN S. NEWELL, A.B., M.D., Professor of Clinical Obstetrics, Harvard University; Obstetrician, Massachusetts General Hospital. London and New York: D. Appleton and Co. 1921. With 53 illustrations. Pp. 210. £1 1*s*.

THE operation of Cæsarean section is occupying so large a place in the treatment of many complications of labour at the present time that a methodical review of the operation and its results,

such as this monograph contains, is of great interest and value. Professor Newell is an obstetrician of considerable experience, and it is refreshing to see that he, at any rate, is not so enamoured of the frequent performance of Cæsarean sections as a means of overcoming many of the accidents of labour as are a number of the younger obstetricians at the present day. As he points out, the operation is undoubtedly abused, and "its true value can only be appreciated when it is applied to properly selected patients by competent operators." On the whole he declares himself in favour of the classical operation, and does not think that the various modifications introduced have any real advantages. At the same time he admits that the good results obtained by Kustner in his extraperitoneal method, namely 112 cases with only two deaths, are very striking, and show the method to have good features.

Professor Newell's teaching with regard to the treatment of contracted pelves by abdominal section is that generally recognised by the majority of teachers. In dealing with ovarian tumours he favours Cæsarean section followed by ovariotomy. He agrees in general with the dictum "Once a Cæsarean always a Cæsarean." In cases of eclampsia he believes the operation has a limited application, but on the whole he agrees with the conservative school, who prefer to treat the eclampsia rather than to terminate the pregnancy. In placenta prævia he is in favour of version or the use of a hydrostatic bag, and does not see any likelihood of the maternal or the fœtal mortality being lowered by the more frequent performance of Cæsarean section. In the worst cases of accidental hæmorrhage he recommends delivery by the abdominal route. In performing the operation he follows the usual technique, and sees no special advantages either in the subumbilical incision or in opening the uterus through the lower uterine segment. As he points out, the performance of an ordinary classical Cæsarean section calls for much less skill or knowledge than the delivery of a patient in a difficult case of labour by the vagina, and this is one of the main reasons why the operation at the present time is so often performed on occasions when it is not certainly the best or the safest method of delivering the patient.

The book is a very sound piece of work, and Dr. Newell's views are in harmony with those of the majority of experienced teachers of the subject.

COUNSELS AND IDEALS FROM THE WRITINGS OF WILLIAM OSLER.

Second edition. Selected and edited by C. N. B. CAMAC. London: Humphrey Milford, Oxford University Press. 1921. Pp. 355. 8*s.* 6*d.*

COLLECTIONS of extracts from any author are, as a rule, unsatisfactory, except in the case of poets, where whole short poems can be given. This collection is to our minds no exception to the rule, despite Dr. Camac's statement on p. xv. of his preface to this second edition, though we agree that a few of the extracts lose nothing by being divorced from their context. But for an anthology Dr. Camac's selection is well made, and those who have neither the leisure nor the opportunity to read Osler's works in their entirety will find fragments of gold dust which may well set them seeking in the matrix where lies the original metal.

Osler was widely read and steeped in seventeenth-century literature. Sir Thomas Browne one may almost say he knew by heart, while the language of the Authorised Version and of the Prayer Book appears again and again in his writings; and though he was eminently practical, and though there perhaps never lived a clearer teacher, yet in his writings we feel the vague detachment from the troubles of this world which we feel in reading Browne, or Vaughan, or Feltham, who wrote that wise book of "Resolves" when only 18. In these troublous times it is well for us to read Osler and to remember one of his rules of life—"to do the day's work well, and not to bother about to-morrow." To no man more than to Osler does the dictum of St. Bernard apply, "Tu qui in Congregatione es, bene vive, ordinabiliter, sociabiliter, et humiliter: Ordinabiliter tibi, sociabiliter proximo, humiliter Deo." We must refer to an error which occurs on p. 24, where we find "Nowhere in literature do we have such a charming picture . . . as that given in Plato's *Dialogues of Eryximachus*, himself the son of a physician, Acumenus." Of course this should read, "as that given in Plato's *Dialogues*, of Eryximachus." In a third edition this should be corrected.

INTERNAL SECRETIONS.

Die Innere Sekretion. By Dr. ARTHUR WEIL, Privat Dozent der Physiologie an der Universität Halle. Berlin: Julius Springer. 1921. Pp. 140. M.28.

THE author has compressed into a volume of 140 pages a mass of scientific fact and theory. He gives a concise summary of our present knowledge of the internal secretions in regard to their functions, their influence on the growth and development of the body generally, and discusses the minute histology of the glands. He is no slave to the idea that the internal secretions alone reveal to us the secrets of life; they do not, he says, rule over all, but share with the brain and nervous system the regulation of the course of life. The composition of the blood and the influence thereon of the secretions of the thyroid, thymus, and suprarenal are discussed fully by Dr. Weil, while special reference is made to the ferments of the plasma and the effect of the injections of gland extracts on coagulation-time. He explains that both factors in the circulation of the blood, the activity of the heart and the resistance of the peripheral circulation, are under the influence of the internal secretions, the thyroid and suprarenals increasing the excitability of the nerve endings, whilst the pituitary acts directly on the heart muscles.

In discussing metabolism, he shows how in thyroidism the negative nitrogen balance can be lessened by full doses of fat and carbohydrate; as to heat production, he maintains that the thyroid and pituitary increase heat by stimulating cell oxidation, whilst the adrenals act physically by their action in contracting the peripheral vessels. Many authorities would disagree with Dr. Weil here, and would claim that the thyroid acts partly by increasing the electrical conductivity of the tissues, and that the suprarenal is directly concerned with cell oxidation. Dr. Weil considers that the kidney has its own internal secretion, on the grounds that experimental injections of kidney extract reduce the symptoms of uræmia after the removal of the kidneys. The relation of the pituitary to the kidney, and the action of cholin on the intestinal contractions, are also discussed by Dr. Weil, who points out that there is more of this latter base in the adrenals and spleen than in the intestinal mucous membrane. In dealing with the theory of the vitamins, he suggests the possibility of their being antecedents of the internal secretions, and shows the similarity in the chemical formulæ of tyrosin, tyramine, hordenin, and adrenalin, and further directs attention to the resemblance between pellagra and Addison's disease, and to the degenerative changes in the ductless gland, especially the thymus, in beri-beri. The influence of the internal secretions, more especially those of the thyroid, parathyroid, thymus, sexual organs, and pituitary, on the rate of growth, relative development of the different parts of the body, and the variations in the two sexes form the subject-matter of another section of the book. Dr. Weil describes the development of the sexual organs and shows how the testicular and ovarian secretions influence the development of the sexual characteristics of the male and female.

Experimental change of sex is illustrated by a photograph of some guinea-pigs, in whom transplantation of the glands of the opposite sex was effected. Dr. Weil recognises three ovarian secretions, one related to the development of form, another concerned with the function of menstruation, and the third, which he associates with the corpus luteum, connected with the development of the placenta. In hibernating animals he has found atrophy of the sex organs in the autumn and asserts that the thyroid and pituitary are similarly atrophied. Recent work in America by Rasmussen on the woodchuck does not support this as regards the hypophysis. Mental conditions Dr. Weil regards as directly under the influence of the internal secretions. The nervous system regulates the ductless glands as well as other organs of the body; on the other hand, these glands in their turn influence the nervous system. The chemistry of the internal secretions, as far as they have been investigated, is discussed, and formulæ are given of adrenalin, cholin, thyroxin, and spermin; the isolation by Hermann of a hormone from the ovary, and by Führer of a crystalline substance of chemical structure still undetermined from the hypophysis, is mentioned.

The illustrations in the book are excellent and the various tables instructive. Altogether the volume can be recommended to those who desire a concise review of the present knowledge of the internal secretions. The clinical aspect is not dealt with.

THE COMMUNITY HEALTH PROBLEM.

By ATHEL CAMPBELL BURNHAM, M.D., Health Service, Atlantic Division, American Red Cross, &c. London and New York: The Macmillan Company. 1920. Pp. 160. 8*s.* 6*d.*

THE author's preface tells us this book is intended to give welfare workers, public health nurses, and practising physicians an outline of the measures which are being suggested for the solution of the health problem as it exists in the United States. The problem as it exists in Great Britain does not differ in essentials, and for that reason we feel sure that Dr. Burnham's book will be read with interest by a wide circle of readers in this country. In our issue of April 9th we commented at length on the recently issued Hospital and Health Survey in Cleveland, Ohio, and it is justifiable to deduce that experiments have been carried further in this country than in the United States as a whole. No general system of school clinics, tuberculosis dispensaries, maternity and child welfare centres, free venereal disease clinics, and medical treatment on the insurance principle has as yet been established in the States. In this respect the Americans will be able to benefit by our experience and our failures. We well recognise, however, that we are only in the experimental stage, and that our own medical service is in the melting-pot. We have a long way to go before we secure for each family a family doctor with a public health point of view, who will be called upon when required (irrespective of the fear of a bill which may cripple the resources of the family perhaps for years), and who will be linked up with consulting physicians and surgeons, dentists, hospitals, convalescent homes, midwives, district nurses, and mothers' helps in such a way that his patients may have the benefit of these services in time of need. This is, in fact, something like the problem which Dr. Burnham puts before his readers.

In Chapter I. the author endeavours to give some idea of the extent of sickness disability. He estimates that about 6 per cent. of an average community are always in need of medical treatment, and that sickness leads on an average to a loss of nine days wages per head per year. He lays stress upon the small amount of the public expenditure to prevent sickness, and instances the work of the Rockefeller Foundation as an example which should be followed by public bodies. The fact that the private physician has neither the experience nor the time to practise preventive medicine is emphasised. Chapter V. is devoted to the important part that must be played by public health nurses in any satisfactory "programme for the betterment of community health." In the next chapter the question of the rehabilitation of the disabled worker is discussed, and the methods are noted of the Ford Company, which can boast that a man is never discharged from their employ because of physical disability. "If he is unfit for his former occupation, he is trained for another." In a later chapter we learn from Dr. Burnham that the Federal Board was overwhelmed with the problem of training the men disabled through the war. This is somewhat surprising when we consider the immense financial resources available and the comparative size of the problem to be faced in the United States and in the other belligerent countries.

Interesting experiments in industrial medicine, in the establishment of health centres and in social unit organisations are recorded in other chapters, and the book ends with some account of endowed health demonstrations such as the Rockefeller and Russell Sage Foundations.

WAR DIARIES.

The Diary of an Australian Soldier (Captain K. J. Barrett). Melbourne and Sydney: The Lothian Book Publishing Co. 1921. Pp. 222. 7*s.* 6*d.*

Books about the war are many, but it is right and natural that this should be so. The one before us is of particular interest as a simple record, kept for the information of his family, by a young Australian officer, who, like so many others, developed both in character and grasp of things under the strain of military necessity.

Keith Barrett's father, Lieut.-Col. Sir J. W. Barrett, A.A.M.C., who writes a preface to the diary, points out that his son was not distinguished as a boy by any scholastic ability, but that the training in the officers' instruction school developed him in a remarkable manner. Moreover, he has left behind him various essays on discipline, on making men comfortable, and on other branches of knowledge essential for an officer, which, if they are anything like the diary, would be well worth publishing. Barrett received his training in Egypt in 1915, when he was given a commission in the Imperial Army, having on the outbreak of war volunteered as private in the 2nd Field Ambulance (Queensland). He served first in the Dardanelles and then in France, was twice mentioned in despatches during his life, and again after his death, which occurred on April 16th, 1917, from wounds received at Guemappe three days previously. For his work at the capture of "The Harp" on April 9th he was recommended for the D.S.O. The diary is a plain unvarnished record of the hard work, the failures, the successes, and the daily routine of warfare, but is full of little touches which show what manner of man was the young officer of the improvised armies, how earnestly he strove to do his duty, and how his whole thought was for his men.

The Diary of a Yeomanry M.O. By Captain O. TEICHMAN, D.S.O., M.C., Croix de Guerre, Croce di Guerra, R.A.M.C. (T.F.). London: T. Fisher Unwin. Pp. 283. 12*s.* 6*d.*

THIS book is remarkable for the self-effacement of the writer. We see by the title-page that Captain Teichman gained most honourable distinctions, yet the reader would hardly gather from his pages that he was anything but an intelligent observer who had accompanied the forces on various fronts: who had a certain amount of military knowledge and was rather interested in medical matters. He served in Egypt, the Gallipoli Peninsula, Palestine, and on the Piave, and on at least two occasions was wounded. The greater part of his service was in the Palestine campaign, and he gives a graphic account of the

sufferings endured by both men and animals mainly on account of lack of water, but his own share of the work is mentioned only impersonally.

Here and there he tells good stories. On p. 218 we hear of a private in an Egyptian Labour Corps who was anxious to return to Egypt. He accordingly wrote the following moving appeal to his C.O.: "Sir, my absence is impossible, some man has uprooted my wife, my God I am annoyed; yours faithfully." Captain Teichman does not say whether the writer obtained his leave, but we think he did. Another incident occurred during his service in Italy when he was acting S.M.O. of Faenza, where there were two hospitals, British and Indian, fed by train from various Eastern fronts. On p. 255 he relates how "on one occasion a train containing Indians suffering from mumps was held up for half a day near the station, being shunted on to a siding; when it had continued its journey the local sanitary authorities disinfected the permanent way, but later it transpired that the engine which had drawn the train had been waiting on another siding, and accordingly the rails on which it had stood were also solemnly disinfected." It is pleasing to think that so meticulous a regard for prevention has survived in Italy for some seven hundred years, for Ammianus Marcellinus, writing of the year 353 A.D., tells us in his account of Rome, Bk. XIV., cap. 6, that the fashionable Roman society of the day was so afraid of infection that not only did they decline to see a sick friend, but even when they sent a slave to inquire after him the slave was not permitted to re-enter the house with the answer until he had had a bath.

We take leave of Captain Teichman's book, with a recommendation that it should be read, and add only that we wish he had told us a little more about himself.

CLINICAL EXAMINATION OF DISEASES OF THE LUNGS.

By E. M. BROCKBANK, M.D., F.R.C.P., and ALBERT RAMSBOTTOM, M.D., F.R.C.P. London: H. K. Lewis and Co. 1921. Pp. 88. 4*s.* 6*d.*

THE title of this useful little book suggests that the authors examine diseases rather than the organs in which they occur, and this seems a topsy-turvy notion. In the covers of much standard information, the authors sandwich in many useful hints which are far too rare in text-books. Thus, in the case of a short, persistent, dry cough, they give the sensible but rather unusual advice that the physician should search for its cause in the external auditory meatus. Again, with regard to paracentesis abdominis in a case complicated by bronchitis they advise caution, pointing out that if the fluid be removed, the stretched abdominal muscles may no longer be able to help the diaphragm and thoracic muscles in their expulsive efforts in coughing. "The result is that the patient cannot get rid of the bronchial secretion, and may easily be drowned in his own sputum." The authors' English is deplorably inelegant, but this is a matter of secondary importance in a handbook of this description.

THE RHYTHMIC DANCE-BOOK.

By MARGARET EINERT. London: Longmans, Green and Co. 1921. Pp. 96. 4*s.* 6*d.*

Miss Margaret Einert, in her small and readable book, tells us that a sound mind in a sound body is not enough, there must also be a sound emotional nature. In order that this may be cultivated, she advocates that children should dance to express their joy in life. They must dance with body and head and arms as well as with feet. They must not move to the music; they must be moved by it. "Imagine," she says, "a fresh green lawn and a fiddler roaming about, playing as he walks from sheer happiness and love of his art. Imagine then a flock of loose-clad children dotted all about among the flowers and the sunshine." Rhythmic dancing, according to the enthusiasts, makes for joyous health, for complete coördination and control, for imagination, for self-realisation.

One delightful chapter in Miss Einert's book deals with stories in movement. For instance, children are asked to dance as though they were on the sea-shore. At once they picture sands, surf, waves, storms, thunder, and mermaids, and mark on the grass a section for sand, one for surf, and one for deep sea. They listen quietly to the music played once through and then they dance. The storm and the waves have their appropriate musical passages, and six children dancing together are taught to represent the curling wave, the incoming tide, the break of the surf on the sand. The teacher unfolds the story a little. Calm sets in after the storm, the sun comes out, and to a gentle melody the children spring forward to the shallow water and at once become mermaids combing out their long hair in the sunshine. Another dance-story represents the spirit of Christmas—another "The Wind and the Rose." Further chapters deal with verse-dancing, with plastic posing, and with suitable clothing to allow freedom of movement.

A charming book with a strong eugenic side.

Reports and Analytical Records.

ETHANESAL.

(SAVORY AND MOORE, LTD., 143, NEW BOND-STREET, LONDON, W.)

THIS anæsthetic apparently has the physical properties of ether. It is anhydrous, free from sulphur compounds, and has a neutral reaction. It contains a very small amount of a substance oxidised to acetaldehyde by chromic acid, which presumably is ethylic alcohol. Ethanesal commences to boil at 33·9°C. When fractionated:—

41	per cent.	distilled	over	between	33·9° and 35·0°C.
13	,,	,,	,,	,,	35·0° ,, 36·1°
16	,,	,,	,,	,,	36·1° ,, 37·8°
28	,,	,,	,,	,,	37·8° ,, 40·2°
2	,,	,,	,,	,,	above 40·2°

When ordinary B.P. ether is fractionally distilled some 97·5 to 98·5 per cent. passes over at 34° to 36°C., hence it is obvious that ethanesal is a mixture of substances having a boiling-point not far removed from that of ether. According to the statements of Dr. R. L. Mackenzie Wallis and Dr. C. L. Hewer in THE LANCET of June 4th (p. 1173) it appears that the anæsthetic properties of ether are due to the presence of certain ketones. Ethanesal is a mixture of pure ether and these ketones, and the introduction of this anæsthetic may be regarded as a distinct advance in anæsthetic practice.

TUBERCLE VACCINE R.

(ALLEN AND HANBURYS, LTD., LONDON.)

We have received two sample boxes of this preparation, introduced on personal trial by Dr. Nathan Raw, together with an explanatory pamphlet. According to the latter, this vaccine, which is designed for use both as a curative and prophylactic agent, is prepared from cultures of *B. tuberculosis*, subcultured without a break for 14 years. The vaccine is to be administered on the principle advocated by Dr. Raw, that the two types of disease, human and bovine tuberculosis, are antagonistic to one another, and that a mild infection of the one protects against the other. It is suggested that doses should begin at 0·001 mg. and be continued for at least 12 injections in increasing doses at intervals of seven days up to 0·025 mg. The pamphlet does not state whether the bacilli have been killed by heat, and if so, at what temperature, or by the addition of antiseptics. The price of the vaccine is 5*s.* per dose.

Each box contained three ampoules of 0·001, 0.002, and 0·003 mg. vaccine respectively, marked human strain. The contents of a 0·003 mg. ampoule

when centrifuged showed small numbers of intact acid-fast bacilli, morphologically resembling tubercle bacilli with no sign of disintegrated organisms. Cultures on glycerinated Dorset's egg medium remained sterile. No secondary organisms were found either in films or on ordinary culture media (broth and agar). Two guinea-pigs were inoculated subcutaneously with the vaccine; one was given 0·003 mg. and the other 0·006 mg. No toxic symptoms were observed following inoculation and when killed three weeks later no signs of tuberculosis were observed macroscopically or microscopically.

QUINOSAL.

(S. H. M. CO., LTD., SUTTON, HESTON, MIDDLESEX.)

This preparation is made from quinine ethyl carbonate, known as euquinine or tasteless quinine and salicylic acid. It is in the form of small crystals melting at 197°C., and when analysed was found to consist of salicylic acid 25·2 per cent., and quinine ethyl carbonate 74·4 per cent., water nil, ash nil. Quinosal is therefore a definite chemical compound with the composition corresponding to the salicylate of quinine ethyl carbonate. Quinine salicylate has been recommended for diarrhœa and neuralgia, rheumatism and sciatica. Quinosal is intended as a tasteless substitute for this drug. It is satisfactory to see that English manufacturers are placing high-class synthetic drugs of this kind on the home market. We are informed that the S. H. M. Co., are the sole makers of quinine ethyl carbonate in this country.

HÉMOSTYL.

(WILCOX, JOZEAU AND CO., 49, HAYMARKET, LONDON, S.W.)

Three ten cubic centimetre flasks of this serum were received for examination. It is obtained from the horse by bleeding the animal during the regeneration phase which follows a hæmorrhage. This is done on the principle that the hæmopoietic properties of the serum are increased during this period. On examination the serum was found to yield no growth on aerobic or anaerobic cultures. Injected subcutaneously into a guinea-pig, the serum gave rise to no toxic symptoms and a second dose repeated three weeks later caused no anaphylaxis. The serum, therefore, is non-toxic and non-anaphylactic and is free from contaminating organisms.

LYSOL WARD SOAP.

(LYSOL, LTD., 9 and 10, ST. MARY-AT-HILL, LONDON, E.C.)

On analysis we find this soap has the following percentage composition: Fatty anhydrides, 54·4; Na_2O, combined as soap, 6·2; Na_2O, combined as Na_2CO_3, 0·3; free alkali as NaOH, trace; and water, 37·9 per cent. Resin acids are present, and the claim that the soap contains 3 per cent. of cresols is substantially correct, a content which confers definite antiseptic properties. It is stated that this soap is manufactured for hospital and household use and that it is particularly suitable for the washing of flannels. The retail price is about 8*d*. per lb., but in comparing this with other domestic soaps the high percentage of water (37·9) should not be lost sight of.

TURNWRIGHT'S TOFFEE DE-LIGHT.

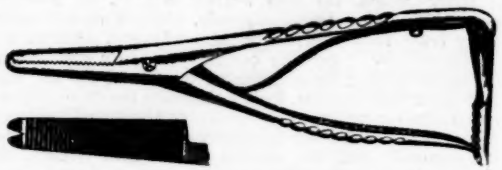
(TURNER AND WAINWRIGHT, LTD., BROOKFOOT MILLS, BRIGHOUSE, YORKSHIRE.)

On analysis this toffee was found to consist of sugar 65·9, water 7·3, fat 18·7, proteins 2·5, sodium chloride 0·6 per cent. These figures correspond to a mixture of sugars 65·9, dried milk 10, fat (other than that in the dried milk) 16·2, and moisture 7·3 per cent. The salt is probably added with a view to improving the flavour. The texture of this toffee, in common with many other popular modern brands, is soft and caramel-like in character and quite unlike the old-fashioned brittle preparations. The mixture is a well-proportioned one and furnishes a palatable and nutritious sweetmeat.

New Inventions.

A NEW APPENDIX CLAMP.

IN appendicectomy the usual routine is to divide the appendix between two pairs of forceps. By this procedure the contents of the appendix are forced into the part between the two forceps, and, to prevent the spread of infection, the surgeon is compelled to resort to the inevitable "drop of pure carbolic." To avoid this troublesome procedure I have devised



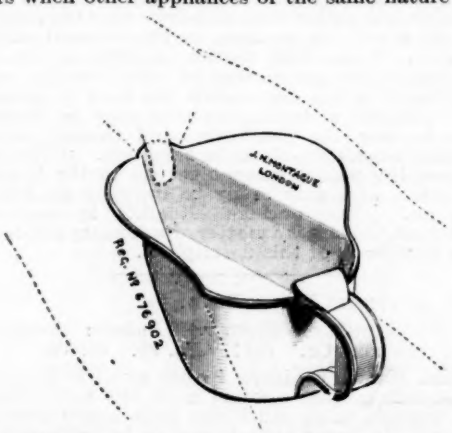
the instrument here illustrated, which is as easy to apply as a pair of forceps. The clamping part of the instrument is wide enough (9 mm.) to allow the base of the appendix to be ligatured and divided at the crushed part, the peritoneal surfaces of which are brought into apposition so that the appendix contents are forced away from the region of ligature and division. The crushing surfaces of the clamp bear fine transverse serrations which fix the appendix transversely. In my opinion clamps with smooth unserrated surfaces which act equally in all directions, unless they are narrow like Mr. Donald Armour's ingenious instrument, tend to produce a longitudinal rupture of the appendix. The ratchet catch and spring are similar to those used in various forms of needle holders, and are locked and unlocked with the greatest ease.

The clamp has been made in accordance with my suggestions by Messrs. Arnold and Sons.

Welbeck-street, W. W. K. IRWIN, F.R.C.S.Edin.

A UROLOGICAL BASIN.

THE urological basin illustrated is of great assistance in the treatment of urethritis and cystitis when irrigation is required. It is specially designed to fit firmly between the thighs without causing undue pressure on the posterior urethra which sometimes occurs when other appliances of the same nature are



used. The flanges cover the inner surface of the thighs, and it is so constructed that no splashing or leaking over the sides can occur, which makes it particularly useful when treatment is carried out with the patient in bed. It will hold more than three pints of fluid and therefore does not require to be emptied during treatment. Lastly it is made of enamel iron and therefore can be sterilised by boiling. Mr. J. H. Montague, 69, New Bond-street, W.1, is the maker.

Welbeck-street, W. WALTER J. RONAN, M.B. Dub.

THE LANCET.

LONDON: SATURDAY, JUNE 18, 1921.

The Report of Lord Cave's Committee.

THE anxiously expected report of Lord CAVE'S Committee upon hospital finance has made its appearance. This Committee, it will be remembered, was appointed by Dr. ADDISON during the debates at the end of last year before a Standing Committee of the House of Commons upon the Ministry of Health (Miscellaneous Provisions) Bill. This measure, which was afterwards rejected by the House of Lords, contained a clause around which important medical discussion centred, inasmuch as it sought to give powers to county councils to supply and maintain hospitals, to contribute to voluntary hospitals, and to undertake the maintenance of Poor-law hospitals and institutions. It was felt in many quarters that such legislation might prejudice the voluntary system of hospital support at a critical time, and Dr. ADDISON accordingly appointed a Committee "to enquire into and report upon the financial position of the voluntary hospitals throughout the country." This Committee, under the chairmanship of Lord CAVE, and consisting of five members only, none of them being medical men or connected with hospital arrangements in any way, issued an interim report at the end of March. The document, which was signed by all the members of the committee, confirmed the view that it is in the public interest to maintain the voluntary system of hospital management, and gave reasons for believing that from the Approved Societies, under the National Health Insurance Acts, a substantial part of the disposable surplus shown by the quinquennial valuation of the assets of the societies should be applied towards the cost of the maintenance of members of the societies while they are in hospital. There is no doubt that the voluntary hospitals are of enormous service to the Approved Societies, and the interim report of Lord CAVE'S Committee had an excellent reception.

Late last week the report of Lord CAVE'S Committee was published, and we were able to give the recommendations, which we repeat this week, together with an abstract of the report. It will be seen that as a main principle the Committee regard the coöperation of the National Health Insurance Commission as essential to their scheme for preserving the voluntary system, which they state definitely to be temporarily in jeopardy. They are convinced that the system is worth saving, and the reasons which they give are practically the same as those that have been advanced over and over again in these columns, whenever the system has been challenged. Freedom in medicine is secured by the voluntary principle; progress and medical research are fostered by it; and in no other way can the education of the medical profession be carried on so satisfactorily as at medical schools which are in close association with a large voluntary hospital. A system with testimonials of this character to its credit is not likely to die without a struggle, and though it may be temporarily open to criticism—the balance sheets at many of the great institutions supply justification for this—there is no reason to doubt, and we have never doubted, that the existing financial conditions are temporary. They are due partly to the circumstances produced by the war, partly to the old-fashioned methods of collecting funds, which have become a stereotyped routine with many of the charities, and partly to faulty methods of spending money. Lord CAVE'S Committee draws attention to procedures which can be undertaken by managers of voluntary hospitals to improve the financial position of their hospitals, and many of their suggestions have been made in these columns and elsewhere upon a good many occasions.

The first clause recommends the formation of a Hospitals Commission, with the institution of Voluntary Hospitals Committees for the country, and we are certain that the central organisation of the charities thus implied will lead both to efficiency and economy. In this way the best methods of administration can be ascertained by comparison and the lessons learnt made the common property of the hospitals. And a further admirable suggestion in respect of such a Hospitals Commission closes the Report. The last clause states that the Hospitals Commission should be authorised during a period of two years to recommend grants for the extension and improvement of hospitals subject to like contributions being made from private sources. A previous recommendation would sanction an immediate grant to the Commission of £1,000,000, so that in the intent to make a joint scheme of benevolence between the public and the State it is left to the State to make the first move.

Treatment of Whooping-Cough.

IN few acute diseases have a larger number of supposed remedies been advocated than in the case of whooping-cough—a sure sign of their doubtful efficacy. The sceptic or nihilist in therapeutics will read with a more or less indulgent smile the description given by Dr. J. D. ROLLESTON in the June number of *Medical Science* of the various forms of treatment which have been recommended for this disease within the last two years. The principal novelty first introduced by AUDRAIN of Caen, and subsequently employed by WEILL and DUFOURT, GLEYVOD of Lyons, CHEINISSE of Paris, and other French physicians, is the intramuscular injection of ether, which is given in the upper part of the buttock. The ether is supposed to act by combating the spasmodic element of the disease, and is not regarded as having a specific action on the infective agent of pertussis. The dose employed is 1 c.cm. up to the age of 7 or 8 months, and in older children 2 c.cm. repeated daily or on alternate days. WEILL and DUFOURT, who consider this method to be far superior to any other in the treatment of pertussis, regard it as specially indicated in cases with numerous and severe paroxysms, and claim that after a few injections the children have only abortive attacks unaccompanied by vomiting. GLEYVOD, who reports eight cases in children aged from 2½ months to 8 years, treated by intramuscular injections of ether in WEILL'S clinic, states that the first injections always have a more striking effect than subsequent ones, the system apparently becoming habituated to the drug. If a decided improvement occurs after the second or third injection no more need be given. As a general rule, however, six injections will be equired to produce a permanent effect, and a greater number is unnecessary. Although it is dangerous to give ether in the large doses employed in anæsthesia

to patients suffering from chronic disease of the lungs or bronchi, such as asthma, emphysema, or tuberculosis, there is no contra-indication to its use in the small quantities required for intramuscular injection. On the contrary, GLEYVOD maintains that it acts as an energetic cardiac stimulant in the febrile forms of pertussis, and those accompanied by much constitutional disturbance and severe pulmonary complications.

In spite of the enthusiasm with which a large number of French writers speak of the method, intramuscular injection of ether does not appear to have found general acceptance nor to be invariably successful, as so eminent an authority as Dr. JULES COMBY, of Paris, states that he has had an equal number of failures and successes. In the United States benzyl benzoate, which has been used for a variety of spasmodic conditions, has received enthusiastic support as a remedy for pertussis. From its use in 115 cases, the great majority of which were in children, Dr. DAVID MACHT, of the Johns Hopkins Hospital, has found[1] that the administration of benzyl benzoate solution, either alone or preferably combined with small doses of benzaldehyde, had a palliative though not curative effect on the violence and number of the paroxysms. Five to 40 drops of a 20 per cent. solution were given three or four times a day and oftener, according to the age of the patient and the severity of the disease. The beneficial action of the drug, according to Dr. MACHT, is due to a variety of factors, which include its antispasmodic effect on bronchial spasm, its sedative effect on skeletal muscle, its anæsthetic effect on the larynx, its expectorant properties, and its antiseptic action. Before the Société de Thérapeutique de Paris, at the last session, Dr. L. DUMONT read a paper on the value of adrenalin in whooping-cough,[2] and claimed constant success in relieving the symptoms and abbreviating the course of the disease with this drug. This treatment is not new, and has been advocated in this country, but we know of no recent reports on its utility.

Vaccine treatment, which at one time enjoyed a considerable vogue, especially in the United States, has not fulfilled the expectations entertained. Dr. R. G. FREEMAN, a well-known pædiatrist of New York, states that until lately he had been of opinion that vaccines did not modify the course of pertussis, and that he had never seen a case prevented by their use. Recently, however, he has observed good effects from the use of fresh vaccines in cases where vaccines three weeks old had no effect. In a disease so capricious as whooping-cough, especially when it attacks children of a nervous disposition, it is difficult to estimate how far the effect of a given treatment is due to suggestion alone. LEDERER has recently treated 25 cases of pertussis by painting the throat every two days with a 2 per cent. solution of silver nitrate, a method previously recommended by OCHSENIUS. In the great majority of cases good results were obtained, the paroxysmal stage being considerably shortened, the frequency of nocturnal attacks diminished, and long-standing attacks frequently cured. LEDERER attributes the success of this method to suggestion and not to a specific bactericidal action, and recommends that the treatment should be reserved for older children of a neuropathic disposition in whom the attacks have lasted a considerable time, but without any complications. In such cases his experience is that the method may produce an immediate cure. KLEINSCHMIDT, however, thinks that suggestion can be excluded as an explanation of the success which he obtained from the use of diathermy in a large number of cases, among whom the youngest child was only 9 months old. The question as to how long a case of whooping-cough should be isolated is of considerable interest, especially to the medical officers of schools or children's hospitals. Recent investigations have shown that the disease is most contagious in the catarrhal stage, and ceases to be contagious at all after the third week. Dr. COMBY, therefore, is of opinion that isolation for pertussis may be reduced to a maximum period of a month, and that it is unnecessary to wait for the complete disappearance of the whoop, which may last for several months. But the persistence of the whoop, however harmless to other children, is damaging to medical science.

[1] THE LANCET, 1920, ii., 615.
[2] THE LANCET, 1921, i., 1244.

Panel Prescribing.

AN insurance practitioner was recently invited by his panel committee to show cause why he should not be surcharged under the excessive prescribing regulations for ordering resinol on various occasions in the course of two months for a case of eczema rubrum in a patient who had been unable to work for two years. The bill ran into pounds; it was regarded by the committee apparently as a glaring case. The practitioner appeared at the inquiry and stated that he had tried the B.P. preparation unguentum resinæ without any effect, that the insured person had been treated at hospital for two years, and that he had cured him in two months. The panel committee thereupon decided that he had justified the use of an expensive preparation. A second case has come to hand of an insurance practitioner who, on being asked to attend an inquiry, resented the criticisms of his formulæ and declared his intention of giving his patients the cheapest drugs he could find. The result was that he had to attend an inquiry at a later date on the excessive number of prescriptions given to his patients and the high level of his total drug bill. A third case occurred in which the practitioner was written to because his individual prescriptions exceeded an artificial datum line arranged by his insurance and panel committees. When the whole quarter's prescriptions were scrutinised it was found that the total number of prescriptions was small, the average for each patient treated being less than two and the total drug bill well under the amount allowed for his list at an average of 1*s.* 6*d.* per insured person. These cases well illustrate the position with regard to the provision of drugs for the treatment of insured persons receiving medical benefit.

The Insurance Act requires that the patient shall receive proper and sufficient medicines for the adequate treatment of his condition. The task of deciding what is proper and sufficient for the case is of course placed upon the prescriber, and is subjected to the general opinion of the panel committee, should a prescription be criticised on account of its exceptional cost. By his terms of service a practitioner is required to order such drugs and prescribed appliances as are requisite for the treatment of any patient. Here again the responsibility is placed upon the practitioner to decide what is requisite, and should his ordering be called in question by the panel committee, he must be prepared to justify the decision he has made. Such an arrangement may appear irksome in some individual cases, but it does ultimately lead to a more careful consideration of

the needs of the case before the prescription is written. Inasmuch as practitioners are required to order the medicines necessary for the treatment of their patients on official forms, and these also act as vouchers on which payment is made to the chemist, they are collectively responsible for the amount expended in each committee area in providing insured persons with the proper and sufficient medicine guaranteed by the Insurance Act. These accounts for drugs are paid in full, and the Treasury is directly interested in seeing that a proper control is exercised in the spending of the drug fund. Originally this fund was computed at 2*s.* a head for each insured person entitled to medical benefit, with certain additional funds for special grants in the event of epidemics or excessive sickness. With the great increase in the cost of drugs during the war—and only in the case of a few drugs has the high cost been relieved—and with additional charges for professional services on the part of pharmacists, it is increasingly difficult to provide adequate drugs for insured persons without exceeding the fund as originally estimated. In many areas the allowance has been exceeded during the last two years. In London, for example, it is now approximately 2*s.* 6*d.* per insured person in the area.

It is necessary that some machinery should exist for checking waste, and the present regulations on excessive prescribing appear to be a fair method of controlling expenditure. Possibly some practitioners do not fully appreciate the need to act up to their full responsibility under the terms of service, thus making it impossible for the charge to be brought against the Act that the medicines supplied are inadequate and inferior either in quantity or quality. The charge, when made, reflects on insurance practitioners who are failing in their duty. In practice it is found that an exceptionally high drug bill connotes carelessness in the frequency with which prescriptions are given and in the quantity of medicaments ordered. Instances are on record of an individual prescription supplying the needs of the rest of the family. Moreover, free prescribing may lead on to vicious drug habits, and it is for practitioners generally to increase the estimation in which their advice is held and to reduce to a reasonable dimension the abject faith in drugs so common in neurotics and hypochondriacs. A careful, well-conceived prescription, however costly, means more effective treatment, with a resultant shortening of the term of the illness and material reduction of the quantity of drugs taken. The contention that there is no leisure in a busy practice for such thought and consideration is tantamount to an admission that the quality of the work is being sacrificed, and the time may soon come when the remuneration will be based on the quality of the work done rather than on the quantity—as in the present scheme. If, however, the quality is improved—and there is good evidence to show that the service given to insured persons reaches a higher standard year by year, and if it is still found that the drug bill is generally exceeded, then the question of more adequate provision will arise. On the other hand, the present arrangements are sufficiently elastic for special grants to be made to so-called necessitous areas. Practitioners have a responsibility in seeing that their patients get the proper and sufficient medicine specified in the Act. With the responsibility goes the burden of justifying their orders to a committee of their colleagues, who are probably the best tribunal for deciding the matter. An admirable memorandum published by the London Panel Committee throws much light on the whole question of the drug tariff.

Annotations.

"Ne quid nimis."

THE THEORY OF RELATIVITY.

THE difficulties of travel successfully overcome by our distinguished visitor, Prof Albert Einstein, should stimulate those of us, who have hitherto been reluctant, to start our own journey into an unknown and difficult country full of dangerous curves, projections, and angles subtending monuments of even higher mathematics. Dr. Einstein's address at King's College last Monday evening gave his hearers an attractive glimpse of what they might expect. To those who now decide to sally forth a useful guide is at hand in the shape of a book by Mr. E. Cunningham, who expounds the principle of relativity with great clearness.[1] When the first edition of this book appeared no experimental confirmation of the Theory of Relativity had been made. In the interval two out of three predictions have been verified, and spectroscopists are at present engaged upon the outstanding one. For a full comprehension of the general bearings of the principle of relativity a knowledge of mathematics is no doubt essential, and Mr. Cunningham's book is not without mathematical expressions to which it is difficult always to ascribe a direct physical meaning; but this implies only that his lucid exposition will appeal to a wider public than that for which it is primarily written. To the physician skilled in differential diagnosis the mental processes involved in this science, and the mode by which the Theory of Relativity has been developed, must appear to have a certain resemblance. When physicists invoked the æther as a medium for the transmission of light, all went well until experiments, designed to show the drift of this æther past the earth in its motion, all yielded negative results. A way out of the dilemma was suggested by Fitzgerald and developed independently by Lorentz; this was that the length of a body was not an invariable quantity, but depended on the direction of its motion through the æther. The Electronic Theory of Matter bids one refer anything so fundamental in character back to the electrons themselves; this, however, as Mr. Cunningham reminds us, only throws the mystery one stage further back, for the final question remains as to why the electron should change its effective dimensions in just the required amount to account for the failure of all observations to show our motion through the æther. The theory here set forth is on a different plane from such physical laws as those embodied in Maxwell's equations embracing the electro-magnetic theory of light; it is a general mode of thought, and many readers will share Mr. Cunningham's surprise that the generalities of which he writes should suggest any precise experimental findings; that they explain outstanding discrepancies within the degree of accuracy possible by observation is sufficient reason for the value placed upon them. The Theory of Relativity, at any rate to some, has brought a different view-point to bear upon the general outlook of natural phenomena. In Mr. Cunningham's words: "The fact that we are able to make such an excellent guess at the form of the laws of nature by mere geometrical considerations leaves us with an uneasy feeling that we are looking at nature through coloured glasses, and are simply seeing those aspects of phenomena which are the easiest for us to appreciate. This, however, is the usual course of science, and it is something to feel that this most comprehensive of physical theories itself suggests that when our power of vision is greater we shall discover whole new realms of phenomena."

[1] Relativity, the Electron Theory and Gravitation. By E. Cunningham, M.A. Second edition. With diagrams. London: Longmans, Green, and Co. Pp. 148. 10*s.* 6*d.* net.

In conclusion, we may remind our readers of the admirable special number of *Nature*, which appeared on Feb. 17th, and was entirely devoted to brief expositions on Relativity by acknowledged experts.

PNEUMONIA IN THE U.S. ARMY DURING 1917—18.

DURING the winter and spring of 1917–18 an epidemic of measles, occurring among the troops quartered in the United States Army Camps, was associated with a great epidemic of a peculiar form of pneumonia caused by a hæmolytic streptococcus; the epidemic was characterised by indefinite physical signs, by dyspnœa of an extreme type, and by livid cyanosis. This type of pneumonia was easily recognised as distinct from that ordinarily indentified as lobar pneumonia, more particularly as certain other cases occurring simultaneously displayed definitely the usual features of this acute specific fever. In an historical survey [1] of the epidemic form of pneumonia, Professor W. G. MacCallum points out that there is nothing new in its manifestations. The relationship of measles to severe and fatal pulmonary inflammation has always been recognised. With a fair degree of probability such epidemics may be traced back to the 16th century; recognisable descriptions date from 1812 (James Low), and perfectly clear ones from Delafield in 1884. The condition studied by Professor MacCallum may be indentified with that familiar to British readers as "purulent bronchitis," the first descriptions of which were published in THE LANCET in 1917 by Hammond, Rolland, and Shore [2] working in France, and by Abrahams, Hallows, Eyre, and French [3] who simultaneously and quite independently were obtaining identical results at Aldershot. Professor MacCallum concludes, "From the anatomical description which is given [in the articles on "purulent bronchitis" referred to], it seems evident that the lesion is practically the same as that which we are about to describe for the epidemic in this country." He observes, however, that the prominence of the influenza bacillus, which the British writers emphasise, was not demonstrable to the same extent in America, and he prefers the term broncho-pneumonia to "purulent bronchitis" (or bronchiolitis), as he found "the whole lung including the framework and pleura to be promptly affected." Measles is, of course, not an indispensable antecedent; it lowers the resistance of the tissues to the secondary organisms, e.g., pneumococcus or streptococcus hæmolyticus, which are responsible for the serious complications, and its rôle may be fulfilled by micro-organisms recognised or at present unrecognised. Professor MacCallum, in the first fasciculus, deals exhaustively with the post-mortem appearances, and to a minor degree with the clinical manifestations, of the fatal cases encountered in this first epidemic, which occurred contemporaneously with the cases of "purulent bronchitis" described by the British workers. At the conclusion he adds that since his paper was sent to press another and much greater epidemic has occurred, with appalling mortality, of pneumonia, and the investigation with special reference to the pandemic is elaborated in the second fasciculus. The original disease in this epidemic has, to use his own expression, been spoken of as influenza. He is clearly sceptical as to the rôle of the *B. influenzæ* in this epidemic, adding that it is found in pure culture associated with a form of pneumonia which is practically identical with the interstitial broncho-pneumonia described in connexion with measles. He considers that the evidence to hand for incriminating the *B. influenzæ* as responsible for the epidemic is inconclusive, and he relies upon the existence of some ultra-microscopic virus, an opinion in which he will not lack support in many circles. However, Dr. John Eyre, who was prominently associated with the original research at Aldershot, and with the investigation of many of the subsequent epidemics scattered throughout the country, is apparently satisfied that it is not necessary to invoke the presence of this hypothetical virus to explain the phenomena noted.

Nevertheless, in whatever features the author diverges from workers in this country in his opinion of the relative rôles played by the *B. influenzæ* and other organisms, his papers are in the main confirmatory of the chief results which have emanated from them. Three features in his results call for special reference. In the first place, we note the remarkable incidence of empyema. In the 49 autopsies enumerated in the first fasciculus, empyema figures in no fewer than 33. In this connexion it must be remembered that the term empyema is not used in the strictly surgical sense of thick pus, for which in life resection of a rib would be indicated. The author himself refers to this point in stating that in the majority of cases a thin watery turbid fluid occupied the pleural cavity and that the patient rarely survived long enough for thick pus to develop. More than one British worker has been struck by the relative frequency of this and other pathological features in epidemics occurring in certain areas, with relative infrequency or total absence of the same features in epidemics simultaneously occurring elsewhere. In other words, local peculiarities are prominent, and in all probability this empyema incidence may be explained as a special feature of the organisms in the epidemic here described. Secondly, only in the rarest instances was a positive blood culture obtained from a streptococcal infection, and in these cases only immediately antecedent to death, although in every case the heart's blood invariably yielded a positive result. Finally, as denoting the exhaustive character of the investigation, we note that the microscopical examination of the testes exhibited in many cases a cessation of spermatogenesis, a peculiarity to which attention has not been directed in this country.

[1] The Johns Hopkins Hospital Reports, vol. xx., fasc. i. and ii. The Pathology of the Pneumonia in the United States Army Camps during the Winter of 1917-18, and the Pathological Anatomy of Pneumonia associated with Influenza. By W. G. MacCallum, M.D. Baltimore: The Johns Hopkins Press. 1920-21.
[2] THE LANCET, 1917, ii., 41. [3] Ibid., 377.

IONISATION METHODS OF X RAY MEASUREMENT.

IN the year following the discovery of X rays the electrical effect produced by them upon a gas—namely, the ionisation—was shown to be one of their most striking manifestations. The light which a study of these electrical effects has shed upon atomic and molecular structure has illumined a splendid page in physical science; it was these ionisation studies which led to the recognition and isolation of the fundamental unit of negative electricity—the electron—by Sir J. J. Thomson in 1897. Experimental investigations since this date upon the ionisation of different gases under various conditions have been of an elaborative character. The accuracy of the electrical method of measuring the intensity of a beam of X rays made such investigations possible, yet the use of this method for the many medical purposes where intensity considerations are of supreme importance has only come into effect during the last few years.

Perhaps the main reason for this is that the type of electroscope used in ionisation work is only an intensimeter and not a quantimeter. It measures at any instant the intensity of the radiation in question; it does not integrate this intensity over an interval of time and so give a quantity which could serve as a basis for dosage. This is exactly what is required in X ray therapy, and it is probably due to the fact that the Sabouraud pastille acted as an integrator that it has had such an extensive application. Useful as these pastilles have proved for the purposes of surface therapy, their limits of utility are reached when any considerable degree of filtration of X rays is effected, for it happens that

they become less and less sensitive as the wave-length of the X rays is diminished, and so they fail to serve even as accurate indicators of intensity once a certain wave-length is reached. This is not a limiting consideration in methods based upon the ionisation produced, say in air, by X rays of different wave-lengths. Generally speaking, we may say that the electrical effects are proportional to the amount of energy expended in the air by the beam in its passage through it, and do not depend dominantly upon selective processes. This being so, if some method were devised by which the electrical effects could be added up as time went on, then the whole electrification could serve as a basis of X ray dosage; this has now been very largely accomplished and we may anticipate that the electrical method will come more generally into radiological use for therapeutic purposes. One of the first instruments constructed with this intent and suitable for direct medical use, was the ionto-quantimeter of Szilard in 1916. Since then various modifications and improvements have been effected, largely as a result of the requirements of deep therapy. Upon the basis of this type of instrument Seitz and Wintz have founded their method of estimating the dose of X rays reaching organs at a depth in the body; in their treatment of cancer of the cervix by X rays a part of the ionto-quantimeter is actually introduced into the cervix and a measurement made of the intensity of X rays being applied. Two recent papers, one by Schrumpf-Pierron in *Paris Médical* of May 28th, the other by Iser Solomon in the May number of the *Journal de Radiologie et d'Electrologie* give good accounts of the general utility and practicability of this mode of measuring the dose of X rays under various conditions of therapy.

It is reasonable to anticipate that, when an electrical method has received the general sanction of approval, means will be taken to decide upon some unit of X ray energy which, while having a scientific basis for its determination, will be selected with some direct reference to the quantity used by radiologists in the treatment of disease. International recognition of such a unit would do much to coördinate the dosage determinations in X ray therapy throughout the world.

MOLLUSCUM CONJUNCTIVITIS.

ALTHOUGH it is well known that molluscum contagiosum may attack the skin of the lids, the occurrence of conjunctivitis due to this cause is not generally recognised. Dr. Harold Gifford and Dr. Sanford R. Gifford[1] of the Department of Ophthalmology of the University of Nebraska College of Medicine, state that during the last 15 years they have seen about a dozen cases, six of which they describe in detail, in which persistent irritation of the conjunctiva has been kept up by one or two molluscum nodules at the edge of the lids. In none of the cases was there any other evidence of the disease in the uncovered portions of the body, and the patients did not know of any other nodules of the sort, but they were not stripped for examination. In some of the cases quite a marked conjunctivitis of the follicular type was set up, with thickening of the folds, and in one case there was ulceration of the cornea. The mode in which the nodules cause conjunctivitis is hard to determine. That it is not extension of the inflammation from the skin is shown by the usual absence of such inflammation about the nodule on the skin itself. The purely mechanical irritation of the nodule would appear to be almost negligible in the cases in which it is not situated on the lid border but back among the eyelashes. The writers suggest that itching causes the nodules to be rubbed and that in this way some irritating secretion is carried into the sac which sets up the conjunctivitis. Treatment consisted in incising the nodules in typical cases and thoroughly expressing their contents with a ring forceps. In three cases in which the characteristic central umbilication was not apparent, and there were no other typical lesions present, the nodules were removed and found to be definitely molluscous. Though the symptoms were usually relieved quite promptly, in some cases changes were set up in the conjunctiva, which persisted for some time after removal of the irritating agent.

[1] Archives of Ophthalmology, May, 1921.

INDUSTRY AND CONTENTMENT.

ECONOMISTS, political and otherwise, sociologists, and psychologists are ever ready to reconstruct the State, but the social aspects of medical work are seldom appreciated even by our own profession. For the most part these self-appointed lay physicians forget that the health of the State is made up of the health of its constituent members and that no State can be healthy or think healthily unless its members are healthy. Only in one branch of medicine is there some inkling of this fundamental fact—namely, in industrial hygiene. A contribution to knowledge on the subject is contained in the latest report of the Industrial Fatigue Research Board,[1] which deals with labour turnover, a delicate barometer of industrial contentment or of unrest. This report should be read in conjunction with an earlier one written by Dr. M. Greenwood and issued[2] by the Medical Research Council before the Board was in existence. The findings, which deal with more ample data, are in close agreement with those of the previous investigations; they are mainly based on records compiled during war time at national factories, but data gathered from peace-time factories are also laid under contribution. The authors, Miss Broughton and Miss Newbold, point out the loss to a factory of a high rate of leaving among beginners due to the fact that on the simplest of operations workers do not reach a reasonable rate of output under six weeks, while for moderately simple repetition work three months is required. They are able to show that labour turnover is highest in these early weeks and months; curves showing the rate of leaving distributed according to length of employment resemble in an exaggerated form the curve of infant mortality—indeed, Greenwood has aptly called labour turnover the infant mortality of industry. The medical aspect of this important social economic question becomes manifest when the connexion between labour turnoyer and sickness is investigated; here the authors found that those who left with less than three months' service had suffered a much higher rate of sickness than those who stayed longer, that those who stayed for three months but less than six had suffered throughout their period of employment more sickness than those who stayed longer, and similarly that those who stayed six months but less than nine had suffered more throughout than those who still remained in service. Ill-health and physical incapacity were only given as the reason for leaving by some 10 per cent. in war time and by 3·7 per cent. in peace time, but the above investigation showed that even though hardly appreciated by the workers, ill-being lay at the back of much labour wastage.

Most of the records used refer to female employment, and somewhat unexpected results emerge; thus domestic servants, shop assistants, and laundry workers stayed longer than workers from munitions and other factories. Apparently factory work has a definite adverse influence on the power of workers to withstand the strain a second time. Comparison is made between the rates of labour turnover which prevailed before, during, and after the war; for single women the average three-monthly rates of leaving were found to be 25·2 per cent., 27·8 per cent.,

[1] A Statistical Study of Labour Turnover in Munitions and other Factories, by Miss G. M. Broughton and Miss E. M. Newbold. Report No. 13. Industrial Fatigue Research Board. 1921. Pp. 92. H.M. Stationery Office. 3s.

[2] A Report on the Causes of Wastage of Labour in Munitions Factories employing Women, by Dr. M. Greenwood. Special Report Series No. 16. Medical Research Council. 1918.

and 18·8 per cent. respectively for the three periods. The rate of loss during the first three months was specially heavy, amounting to 45·3 per cent., 39·6 per cent., and 22·0 per cent. in the three periods. The post-war period was favourably influenced so far as leaving is concerned by the fear of loss of work due to men returning from the colours and filling up vacancies. Some estimate can be made of what these rates of leaving mean from the fact that "in the pre-war and post-war periods respectively, the number of survivors after 12 months from 1000 entrants in a biscuit factory were 322 and 441 respectively." Great differences were found at different factories, the rate of loss at the end of the first three months varying from 89·2 per cent. to 37·5 per cent., but the influences causing these variations could not be accurately determined. Nevertheless the authors state that at the factory with the lowest labour turnover the conditions were good and the work light; while at one of the worst the high turnover was considered to be "due undoubtedly to the arduous conditions, and in a large measure owing to night-shift working, the ordinary disadvantages as to broken rest being aggravated by the shops being built of corrugated iron with consequent extremes of temperature."

Great care is exercised throughout this excellent report in refraining from drawing any but fully substantiated deductions; hence even more than usual reliance can be placed on the following conclusions:—

(*a*) The high leaving-rate that is evident in the early months of service is not confined to munitions factories nor to the war period, but is also to be found in factories engaged in peace-time industries, and is a source of economic loss at the present time.

(*b*) Married women are evidently a more fluctuating population than single women.

(*c*) The data relating to previous occupations are also too scanty to justify drawing general conclusions, but they indicate that former factory or munition workers are more unstable than those drawn from other sources.

(*d*) The loss for possibly avoidable reasons, such as ill-health, incompetence, and dissatisfaction, is very large.

The authors justly consider a case made for periodical consideration by employers of the state of labour turnover in their factories; and in order to assist the work, give in an appendix specimen forms for keeping records, and a simple exposition of the way in which they can be used. Special attention may be directed to the excellent form of medical certificate suggested in which the system of the body affected (rather than an exact diagnosis) is all that is asked for, as, indeed, it is all that could ever be usefully employed for statistical grouping. We agree with the Fatigue Board, who claim that "the attempt made in this report to measure labour wastage upon a uniform system, essentially similar to that adopted in the valuation of the liabilities of life insurance offices, deserves consideration"; and we congratulate them and the authors on having in this report added something to knowledge.

THREADWORMS AND APPENDICITIS.

VARIOUS workers have ascribed a share in causing inflammation of the appendix to threadworms. Prof. L. Aschoff,[1] of Freiburg i.B., opposes the view advocated by Rheindorf that oxyuris bear a frequent ætiological relation to acute appendicitis. Aschoff holds that appendicitis begins nearly always as an acute disease in a previously healthy appendix, passing after imperfect healing into a chronic complaint. The earliest lesion is commonly found in the deeper folds of the distal part of the appendix, and mechanical causes, by leading to undue delay of bacterium-infected material in contact with the mucous membrane, favour disease; but direct injury of the mucous membrane by foreign bodies or parasites is uncommon. Worms may give rise to pseudo-appendicitis or appendicopathia oxyurica—that is, a condition simulating appendicitis but without pyrexia or much quickening of the pulse-rate. They are found in healthy appendices more often than in diseased ones. Gmelin found that 19 per cent. of 300 patients in a field hospital were infected with oxyuris, and 19 per cent. with trichocephalus. Forty-four per cent. in all carried the eggs of some worm. Among these patients 18 cases of appendicitis occurred, of which only five—that is, less than a third—were in the worm-infested. Encapsuled threadworms may occasionally be seen in the appendical wall; but the histological appearances described by Rheindorf of channels in the mucous membrane made by worms boring into it and other epithelial defects are caused by the dehydration and other procedures connected with the preparation for the microscope. Such epithelial defects are found in sections of all appendices, healthy or diseased, made by the usual methods. If worms are present further artificial defects are caused by the pressing of their chitinous coats into the epithelium when cutting. Such appearances are not seen if the tissue is protected from shrinking by embedding and cutting in celloidin or gelatin. Further, a superficial catarrhal inflammation must not be assumed to be present unless there is migration of cells. Aschoff supports his thesis by statistical and histological detail, and with some warmth. He has laid his material, including sections embedded in various ways, before a medical congress and challenges his opponent to do the same.

[1] Berl. klin. Wochenschr., November, 1920, p. 1041.

THE INDIARUBBER-BALL COUGH SOUND.

WITH a thoroughness which is characteristic of the medical school of Upsala, Dr. G. Bergmark[1] has recently investigated the conditions under which the indiarubber-ball cough sound arises. Thus named by Dr. J. Mitchell Bruce, this post-tussic suction sound has been interpreted by some authorities as a sign of a cavity, on the assumption that it is generated by the elastic recoil of the wall of a cavity. Dr. Bergmark found this sign in 20 out of 39 cases in which the diagnosis of cavitation was confirmed by a necropsy. He failed to find it once among the 40 young and healthy persons whose chests he examined for it. In 35 cases of acute bronchitis, and in 52 of chronic bronchitis, he failed to find this sign, although in 18 cases the bronchitis was complicated by emphysema. The 12 cases of bronchial asthma examined for this sign, failed to show it. It was also negative in every case but one out of 42 in which the diagnosis of bronchial gland tuberculosis had been made by the X rays. In Turban's first stage of pulmonary tuberculosis it was never found, and only in 3 of 36 cases in the second stage was it demonstrable, whereas it was found in as many as 56 out of 130 cases in the third stage. Of a series of 25 cases of pulmonary tuberculosis associated with bronchophony or coarse râles, the sign was found in 16. In another series of 25 cases, in which the sign was positive, 20 exhibited bronchophony or coarse râles. With regard to the post-mortem examinations, no correlation could be established between the size and distribution of cavities on the one hand and the presence of this sign on the other; in two cases in which there had been a suggestion of the indiarubber-ball sound, the necropsy showed no sign of a cavity on the same side. But as there were cavities on the opposite side, this sound may have been conducted from one lung to the other. In view of the possibility that infiltration of the lung without cavitation might give rise to this sign, Dr. Bergmark sought it in 47 cases of croupous pneumonia, but found it only in one in which the pneumonia was complicated by pleurisy. In another series of 77 cases of broncho-pneumonia, he found the sign only in one case, and here again it was complicated by pleurisy. Thus, it appears that infiltration alone

[1] Upsala Läkareforenings Förhandlingar, Feb. 1st, 1921.

is not sufficient to give rise to the sign. It seemed, however, possible that pleurisy, by interfering with the elastic recoil of the lung, might give rise to the sign in the absence of cavitation; in 47 cases of pleurisy 5 exhibited this sound. Dr. Bergmark comes to the conclusion that though cavitation is the chief factor in the genesis of this sign, its appearance may be determined by the presence of pleural adhesions over a cavity. If this is so, the absence of the sign over a cavity may be helpful as indicating the absence of adhesions in the neighbourhood, promoting the successful induction of an artificial pneumothorax.

THE NERVOUS RESPONSE TO STIMULATION.

IN the course of a lecture at the Institute of Pathology and Research, St. Mary's Hospital, on June 9th, Dr. Henry Head said that the thalamus was now definitely proved to be the seat of the affective side of consciousness, a sorting of stimuli taking place here before the final result reaches the cortex. This sorting, rearrangement, and elimination took place not only in the thalamus, but at lower levels as well, the various centres of brain and cord forming as it were a nervous heirarchy. Only the dominant cortical centres are, he said, concerned in consciousness, the exact message they received depending on modification by the lower centres of the crude mixed stimuli arising from the end-organs. The selection of some messages and the suppression of others depends not only on the nature of the stimulus, but also on the condition of the receiving and transmitting mechanism, which may be profoundly modified by previous stimuli or by alterations in the environment. The organic neurologist, said Dr. Head, regards the nervous system as a penny-in-the-slot machine, into which we could put a penny with the certainty that a box of matches would emerge; but in the light of the new physiology it was obvious that one might equally well get chocolates, the result depending not so much on where the penny was placed as on who had been there before. The doctrine of specific nerve energy still apparently holds good, if we remember that a given stimulus may lead to different results under different circumstances. For example, pain is a necessary ingredient of *every* cutaneous sensation since it is a primitive protective factor and the organism cannot afford to eliminate it. If an object—say a test-tube containing warm water at 45° C.—is placed next to the skin the only sensation that is allowed to reach the higher centres is that of pleasant warmth. Heat, cold, and pain spots are severally stimulated, but the messages are incompatible and the strongest wins. This degree of heat being beneficial and not harmful, the impulse of pain may safely be inhibited. Dr. Head compared the central nervous system to a telephone exchange where only certain calls are taken. Pain, except when necessary as a warning, receives no attention. That pain is always an ingredient is shown by an observation made by Dr. Head himself during a well-known experiment on his own radial nerve. At one period of its regeneration any stimulus applied to the base of the index finger was referred to the outer side of the thumb. If the thumb was then stimulated with pleasant warmth and the index finger with icy cold the hot and the cold sensations neutralised each other and the net result was pain. In this case it was as if the favourite and the second favourite of a race came to grief, the rank outsider, pain, arriving first. This selection by suppression, repression, and facilitation of certain impulses depends for its final result on various factors, the chief being the nature of previous stimuli and the condition of the nervous system, and indeed of the body as a whole. For example, all normal persons become giddy if subjected to rapid rotation, but with repeated practice this tendency may be to a large extent overcome, only to return again in conditions of toxæmia, mental depression, worry, or fatigue. Dr. Head defined physical exhaustion as the loss of capacity to dominate impulses derived from peripheral stimuli; and he regarded as one of the most important landmarks in physiological research the discovery that even at the lower end of the spinal cord these same processes of facilitation and suppression could be demonstrated to occur.

THE SCHICK TEST AND NATURAL DIPHTHERIA ANTITOXINS.

THE Schick test[1] has hitherto made a much wider appeal to clinicians and immunologists in America than it has in this country. In a paper recently read before the Pathological Section of the Royal Society of Medicine by Messrs. A. T. Glenny, K. Allen, and R. A. O'Brien, and published in THE LANCET of June 11th, an appeal is made for a closer study of this reaction in Great Britain. The test is based upon the fact that small quantities of natural antitoxins appear to be present in the blood of normal persons. When one-fiftieth of a minimum lethal dose of diphtheria toxin is injected *intradermically* into a normal person it is neutralised by the natural antitoxin present in the blood, and no reaction follows. If, however, a person possesses no such natural antitoxin, the toxin injected will produce a reddened local reaction at the site of inoculation. This reaction is apparently purely an inflammatory one, and is not in any way related to the local reaction produced by Mantoux's intradermic tuberculin test, which depends on hypersensitiveness or anaphylaxis. A negative test therefore indicates some degree of natural immunity to the Klebs-Löffler bacillus, whilst a positive result signifies susceptibility. The authors of the present paper have made a careful laboratory study of the reaction, and indicate its probable usefulness in controlling an outbreak of diphtheria in a school or hospital. It would appear from the published results of Schick himself, and of Kolmer[2] and others in America, that it may be especially useful in young children in whom the question of immunisation is urgent. The authors also indicate certain issues which are of practical importance: (1) The preparation and control of toxicity (m.r.d.) of the test serum, which is, of course, primarily a laboratory matter; and (2) the interpretation which must be placed upon certain "pseudo-positive" and "combined" positive results. The latter raises, as the authors point out, certain very interesting questions as to the toxicity of bacterial proteins which need to be worked out by clinicians and immunologists conjointly. They also go on to discuss the bearing of this reaction in relation to von Behring's toxin and antitoxin ("T–A") method of immunisation.

In the number of the *Bulletins et Mémoires de la Société Médicale des Hôpitaux* of April 14th a series of articles on the Schick test by various authors give results of similar clinical observations on numbers of cases in a school and preventorium. The practical consequence of these various observations needs little emphasis. The use of the Schick test combined with von Behring's "T–A" method of immunisation may yet revolutionise the treatment of diphtheria in school and hospital epidemics. If, in addition, it will help to clear up the hopeless confusion at present existing on the question of diphtheria carriers it will be no small blessing to civilised communities where overcrowding is bound to occur and infection commonly results. The theoretical issues from the point of view of the immunologists are no less arresting, and we shall watch with interest the study of this question, not only with the toxin of *B. diphtheriæ*, but with all those toxins which Ehrlich associated with the toxin-antitoxin phenomenon in his first order of side-chains. Whatever be the truth of the matter with regard to this theory the classification of certain

[1] Münch. Med. Woch., 1913, lx., 2608.
[2] Kolmer: Infection, Immunity, and Specific Therapy, second edition, 1917.

immunological phenomena into groups according to the different reactions of antigens and antibodies is doubtless of much significance.

AN INSTITUTE OF APPLIED MEDICINE.

THE governing body of the Lister Institute presented this week its twenty-seventh annual report to the annual meeting of subscribers. It is a fine record of applied medicine, rendered possible largely by the prophetic vision of Joseph Lister and the wise generosity of Lord Iveagh. In the department of bacteriology Prof. J. C. G. Ledingham has continued his investigations on the transmission of the virus of trench fever. Dr. J. A. Arkwright has concluded his work on bacterial variation, and Dr. H. L. Schütze has shown the possibility of determining the blood group of an individual from a dried sample of his blood, a matter of great importance in medico-legal practice. Dr. E. H. Lepper's research on coliform infections of the urinary system may have a practical bearing on cystitis in the human subject. In the department of biochemistry Prof. A. Harden and Dr. S. S. Zilva have continued their work on accessory food factors, some of the results of which have already been made public through our own columns; and a group of investigators under the guidance of Dr. Harriette Chick are putting into practice the logical deductions from this work in Vienna, where the matter is of more than theoretic interest. The national collection of type cultures, placed at the service of bacteriologists throughout the Empire, continues to grow, and a catalogue of the cultures will shortly be published by the Medical Research Council. Sales of tuberculin and immune serums realised during the year a sum of £53,700, while the income and expenditure account for the financial year shows a substantial balance on the right side. This is the more satisfactory as the item of £19,600 for staff salaries and wages suggests that those who have given their lives to research work for the benefit of their fellows are receiving more than the miserable pittance which is often their only material reward.

TUBERCULOUS ANTIGENS IN URINE.

IT is two years since Dr. Hans Wildbolz of Berne first published [1] the interesting observation that urine from a tuberculous patient, evaporated to one-tenth of its volume and filtered, gives a typical allergic cutaneous reaction when injected intradermically, after the method of Mantoux, into another tuberculous patient. This original observation has been confirmed by Gramen, of Stockholm,[2] and others. Quite recently Dr. M. G. Ichok discusses [3] the whole question of tuberculous antigens in the urine at some length, and gives also brief details of tests made in rabbits. He points out that though it has been left to Wildbolz to make use of the presence of tuberculous antigens in the urine as a clinical test, isolated observations had been made by Marmorek as long ago as 1909 and by Biot in 1914. This test, in Switzerland at any rate, now appears to have acquired a position of clinical importance.

Dr. Ichok's article is suggestive. Apart from chemical questions involved, such as the effect of phosphates and oxalates on the skin reaction, there are at least four possibilities to be borne in mind from the point of view of immunity: (1) The presence of toxic substances excreted in varying amounts in the urine of all tuberculous subjects; (2) the excretion of special degeneration products of unknown composition in the urine of patients with lardaceous disease; (3) the elimination of living or dead tubercle bacilli in the urine of phthisis patients, which is known to occur from time to time apart from the presence of gross lesions in the kidneys; (4) the presence of casts, cellular and bacterial elements (not only tubercle bacilli, but secondary organisms) in the urine of cases of genito-urinary disease. Even if we assume that the process of concentrating the urine to a small bulk by evaporation at 55° C. indirectly sterilises it, there are obvious reasons for only using for the test the urine of early tuberculous cases uncomplicated by genito-urinary disease. Dr. Ichok's article seems to us to offer a fairly accurate method of estimation. After examining the urine microscopically in order to be sure that it contains no products of gross renal lesions, he inoculates the urine, concentrated in the usual way, subcutaneously into rabbits. These animals are found subsequently to develop tuberculous antibodies, which can be detected by fixation of complement.

[1] Correspondenzblatt für Schweizer Aerzte, May 31st, 1919.
[2] Hygiea, 1920, lxxxii., 673.
[3] Annales de Médecine, 1921, ix., No. 2, p. 97.

SECURITY OF TENURE FOR M.O.H.'S.

THE Public Health Officers Bill passed a third reading in the House of Commons on June 3rd. The original intention of the Bill was to give all full-time medical officers of health and sanitary inspectors security in the tenure of their office. The Bill was, however, amended in Committee, so that it is now limited in its application to those officers a portion of whose salary is paid by the Exchequer. There is a further limitation that it shall only apply to the senior sanitary inspector employed by a local authority. The amendments will cut out from the benefits of the Bill a considerable number of medical officers and many sanitary inspectors. Sir Philip Magnus, the introducer of the Bill, agreed with the arguments of those who wished the Bill to apply to all whole-time officers, but had to make concessions to those authorities who had bought their freedom by refusing to accept Government grants, in order to get the Bill through. It was better, he said, to have four-fifths of a loaf than no bread. Considering the large number of sanitary inspectors employed by the county boroughs, we shall be surprised if the Bill applies to more than a tenth of the sanitary inspectors in the country. Theoretically, one cannot gainsay the argument that a medical officer of health or sanitary inspector ought to be in a position to carry out his work for the protection of the public health without the fear of dismissal if his work happens to bring him in opposition to influential members of the local authority which employs him. In practice it may be true, as Sir Kingsley Wood stated during the discussion, that there have not been a great many cases where the medical officers have suffered at the hands of the local authorities, but who is to know in how many cases the medical officers have felt it advisable to give way? A conscientious official who is keen on his job, and feels that he is doing good work, may be pardoned for thinking that it is advisable to take the line of least resistance in a few of such cases, provided he is getting the support of his committee in the execution of the most important sanitary reforms which he has to bring before them. Medical officers of health are not all Don Quixotes, and some will take the line of least resistance more easily than others. To give an illustration, it is conceivable that the examples of the so-called conservancy system, which still disgrace the sanitation of many of our county boroughs, would have disappeared years ago if medical officers of health had had greater security of tenure. We can easily understand the attitude of the local authorities. The bulk of their members respect the advice of an efficient officer, and treat him fairly. They are genuinely interested in the sanitary improvement of their district. They feel that they are able to manage their own affairs without the interference of Government departments which has been so much in evidence lately. "Timeo Whitehall et dona ferentem" was fast becoming the attitude of the local authorities. We believe, however, there are signs of a change, and that the local authorities may safely trust the Ministry of Health in this matter of security of tenure for

public health officers. Our only regret is that the Bill does not, as originally intended, include all whole-time officers, and we hope that what Sir Philip Magnus calls the other fifth of the loaf will be forthcoming during an early session of Parliament.

THE BRONCHO-PNEUMONIA OF OLD PERSONS.

THE frequency of pneumonia and broncho-pneumonia as a final cause of death in the aged is well known. Charcot has related how insidious the onset of pneumonia often was amongst the aged inmates of the Salpêtrière Hospital at Paris. Drs. G. Roussy and R. Lerou[1] have recently published an anatomical-pathological investigation on the subject of broncho-pneumonia of the aged, founded on the material furnished by their department for old persons at the Hospice Paul Brousse at Villejuif. Amongst 300 post-mortem examinations (1919–21) they found lobar pneumonia in 4 cases and broncho-pneumonia in 162 cases. According to their elaborate macroscopic and microscopic examination of the lungs, there are frequently basal lesions of the nature of chronic arteritis and pulmonary sclerosis playing an important part in the production of the broncho-pneumonic condition. The lesions in question lead to the occurrence of a complete or partial vascular thrombosis, with ischæmia and even necrosis, more or less complete, of the corresponding portion of the pulmonary parenchyma. A secondary microbic infection then takes place, and it is easy to understand that the secondary infection of an infarct in the lungs is more likely to occur than of one in the kidneys or brain. The authors claim that their aspect of the matter enables us to understand the frequency of fatal broncho-pneumonia among bedridden persons, suffering from cerebral arterio-sclerosis. According to them, the idea of hypostatic congestion of the lungs fails to explain why such patients can keep to their beds for years without suffering from pulmonary complications, suddenly to be carried off by fatal broncho-pneumonia.

THE DRY METROPOLIS.

THE Metropolitan Water Board has intimated to the Ministry of Health that in consequence of the prolonged drought it is necessary at the present time to conserve the water-supplies of the metropolis, and a circular has been issued to sanitary authorities suggesting the restricted use of water for such purposes as flushing sewers or watering streets and recreation grounds. Drought does not strike like lightning and there has been ample warning that London will be short of water this summer. Thames water provides nearly 60 per cent. of the total supply, the Lee coming second with 23 per cent., well-water only yielding the small remainder of 17 per cent.; and during the month of March the average daily natural flow over Teddington Weir was, in round figures, 890 million gallons, or 1230 million gallons below the daily average of the last 40 years. In the same month the rainfall of the whole Lee basin was under 1 inch, and the months before and since have been equally dry. The river reservoirs with their immense storage capacity of nearly 13 thousand million gallons may seem inexhaustible, but with the normal demand they would give out in 50 days; and the band of chalk under the London clay, although full of water like a sponge, only yields what the pumps are capable of raising. Not since 1899 has there been any such drought. We are better off now than then, for the precious fluid is no longer vended to us by a number of competing companies with the interests of shareholders to consider, and timely notice of the shortage will have been given to the Ministry whose business it is to decide in what directions economy may be practised without danger to the public health. Thirty-eight gallons per head, per day, the normal rate of consumption, leaves a wide margin for luxury and waste. The public would like some guidance on where an l how to save water if and when the need arises. Drainage by water carriage is so automatic and fool-proof, street-cleaning by the sanitary authority so regular, that the average citizen develops little personal sense of responsibility for keeping his city clean and sweet. We confess to some misgiving, however, about the economies suggested for a start. The normal sewer flush may be excessive; the Ministry of Health doubtless knows that it is. But to limit street watering just when the season of zymotic diarrhœa is beginning—that is open to question. In 1899 no one could define the effect of drought on the public health: was it the heat, the dirt, or the dryness of the subsoil that was the potent factor? We are not much wiser now; the spectre of epidemic diarrhœa may again overshadow London should July be hot as well as dry. There may be the same spike on the infant mortality chart for 1921 as there was in the hot summer of 1911. Until we have proved that watering the narrow crowded streets does *not* help to keep away summer diarrhœa we are hardly justified in economising there, rather than on baths and leaky taps. The thoroughfares with a minimum of horse traffic and a top dressing of petrol and lubricating oil may probably be left safely to take care of themselves.

PUBLIC HEALTH AT THE LABOUR CONFERENCE.

THE British Labour Party with its three million members, who for the most part are trade-unionists and voters, holds its annual conference on June 21st at Brighton. Though the conference sits for only four days, the agenda paper gives the text of no less than 248 resolutions and amendments, many of them dealing with world politics, diplomatic questions and recondite economic problems, which even the keenest intellects of the day might find it hard to grasp. Only towards the end of the agenda do we reach the question of education, when the Northampton Labour Party is to demand better treatment of school children's teeth, and complains of the almost total lack of any provision for such serious physical defects as spinal curvature, pigeon chest, and of the insufficiency of nursery schools and open-air schools for delicate children. Twelve proposals on the drink problem all, in one form or another, condemn existing public houses. The Carlisle experiment seems to meet with most approval, the sale of drink only being tolerated where food is provided as well as facilities for social intercourse. Several resolutions demand local option and State control of the trade in alcohol. On the housing difficulty, the executive committee has a resolution denouncing the Government for obstructing, during the last two and a half years, the erection of the half million new houses it had promised. The Government is admonished itself to supply the needed material and thus break up profiteering combinations. The Stepney Trades Council proposes the rationing of house accommodation and the stopping of superfluous house building—namely, luxurious dwellings—while others are forced to live in hovels unfit for human habitation. In regard to old age and other pensions, a number of resolutions are tabled to increase the amounts given, several Trades Councils endorsing a scheme for a State bonus to replace existing organisations for providing subsistence in cases of distress by a national pool collected from the national income at its source. The Poor-law, we imagine, itself disappears in the pool. Demands for better organised and more extensive help to mothers and to widows who have the charge of families are perhaps more likely to find immediate acceptance. In fact, the endowment of motherhood, on a more or less extended scale, has already entered the domain of practical politics. With regard to the Workman's Compensation Acts, a resolution advocates compensation for accidents on the same basis as that upon which

[1] Annales de Médecine, Paris, 1921, ix., pp. 161–196.

immunological phenomena into groups according to the different reactions of antigens and antibodies is doubtless of much significance.

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TUBERCULOUS ANTIGENS IN URINE.

IT is two years since Dr. Hans Wildbolz of Berne first published[1] the interesting observation that urine from a tuberculous patient, evaporated to one-tenth of its volume and filtered, gives a typical allergic cutaneous reaction when injected intradermically, after the method of Mantoux, into another tuberculous patient. This original observation has been confirmed by Gramen, of Stockholm,[2] and others. Quite recently Dr. M. G. Ichok discusses[3] the whole question of tuberculous antigens in the urine at some length, and gives also brief details of tests made in rabbits. He points out that though it has been left to Wildbolz to make use of the presence of tuberculous antigens in the urine as a clinical test, isolated observations had been made by Marmorek as long ago as 1909 and by Biot in 1914. This test, in Switzerland at any rate, now appears to have acquired a position of clinical importance.

Dr. Ichok's article is suggestive. Apart from chemical questions involved, such as the effect of phosphates and oxalates on the skin reaction, there are at least four possibilities to be borne in mind from the point of view of immunity: (1) The presence of toxic substances excreted in varying amounts in the urine of all tuberculous subjects; (2) the excretion of special degeneration products of unknown composition in the urine of patients with lardaceous disease; (3) the elimination of living or dead tubercle bacilli in the urine of phthisis patients, which is known to occur from time to time apart from the presence of gross lesions in the kidneys; (4) the presence of casts, cellular and bacterial elements (not only tubercle bacilli, but secondary organisms) in the urine of cases of genito-urinary disease. Even if we assume that the process of concentrating the urine to a small bulk by evaporation at 55° C. indirectly sterilises it, there are obvious reasons for only using for the test the urine of early tuberculous cases uncomplicated by genito-urinary disease. Dr. Ichok's article seems to us to offer a fairly accurate method of estimation. After examining the urine microscopically in order to be sure that it contains no products of gross renal lesions, he inoculates the urine, concentrated in the usual way, subcutaneously into rabbits. These animals are found subsequently to develop tuberculous antibodies, which can be detected by fixation of complement.

[1] Correspondenzblatt für Schweizer Aerzte, May 31st, 1919.
[2] Hygiea, 1920, lxxxii., 673.
[3] Annales de Médecine, 1921, ix., No. 2, p. 97.

SECURITY OF TENURE FOR M.O.H.'S.

THE Public Health Officers Bill passed a third reading in the House of Commons on June 3rd. The original intention of the Bill was to give all full-time medical officers of health and sanitary inspectors security in the tenure of their office. The Bill was, however, amended in Committee, so that it is now limited in its application to those officers a portion of whose salary is paid by the Exchequer. There is a further limitation that it shall only apply to the senior sanitary inspector employed by a local authority. The amendments will cut out from the benefits of the Bill a considerable number of medical officers and many sanitary inspectors. Sir Philip Magnus, the introducer of the Bill, agreed with the arguments of those who wished the Bill to apply to all whole-time officers, but had to make concessions to those authorities who had bought their freedom by refusing to accept Government grants, in order to get the Bill through. It was better, he said, to have four-fifths of a loaf than no bread. Considering the large number of sanitary inspectors employed by the county boroughs, we shall be surprised if the Bill applies to more than a tenth of the sanitary inspectors in the country. Theoretically, one cannot gainsay the argument that a medical officer of health or sanitary inspector ought to be in a position to carry out his work for the protection of the public health without the fear of dismissal if his work happens to bring him in opposition to influential members of the local authority which employs him. In practice it may be true, as Sir Kingsley Wood stated during the discussion, that there have not been a great many cases where the medical officers have suffered at the hands of the local authorities, but who is to know in how many cases the medical officers have felt it advisable to give way? A conscientious official who is keen on his job, and feels that he is doing good work, may be pardoned for thinking that it is advisable to take the line of least resistance in a few of such cases, provided he is getting the support of his committee in the execution of the most important sanitary reforms which he has to bring before them. Medical officers of health are not all Don Quixotes, and some will take the line of least resistance more easily than others. To give an illustration, it is conceivable that the examples of the so-called conservancy system, which still disgrace the sanitation of many of our county boroughs, would have disappeared years ago if medical officers of health had had greater security of tenure. We can easily understand the attitude of the local authorities. The bulk of their members respect the advice of an efficient officer, and treat him fairly. They are genuinely interested in the sanitary improvement of their district. They feel that they are able to manage their own affairs without the interference of Government departments which has been so much in evidence lately. "Timeo Whitehall et dona ferentem" was fast becoming the attitude of the local authorities. We believe, however, there are signs of a change, and that the local authorities may safely trust the Ministry of Health in this matter of security of tenure for

public health officers. Our only regret is that the Bill does not, as originally intended, include all whole-time officers, and we hope that what Sir Philip Magnus calls the other fifth of the loaf will be forthcoming during an early session of Parliament.

THE BRONCHO-PNEUMONIA OF OLD PERSONS.

THE frequency of pneumonia and broncho-pneumonia as a final cause of death in the aged is well known. Charcot has related how insidious the onset of pneumonia often was amongst the aged inmates of the Salpêtrière Hospital at Paris. Drs. G. Roussy and R. Lerou[1] have recently published an anatomical-pathological investigation on the subject of broncho-pneumonia of the aged, founded on the material furnished by their department for old persons at the Hospice Paul Brousse at Villejuif. Amongst 300 post-mortem examinations (1919–21) they found lobar pneumonia in 4 cases and broncho-pneumonia in 162 cases. According to their elaborate macroscopic and microscopic examination of the lungs, there are frequently basal lesions of the nature of chronic arteritis and pulmonary sclerosis playing an important part in the production of the broncho-pneumonic condition. The lesions in question lead to the occurrence of a complete or partial vascular thrombosis, with ischæmia and even necrosis, more or less complete, of the corresponding portion of the pulmonary parenchyma. A secondary microbic infection then takes place, and it is easy to understand that the secondary infection of an infarct in the lungs is more likely to occur than of one in the kidneys or brain. The authors claim that their aspect of the matter enables us to understand the frequency of fatal broncho-pneumonia among bedridden persons, suffering from cerebral arterio-sclerosis. According to them, the idea of hypostatic congestion of the lungs fails to explain why such patients can keep to their beds for years without suffering from pulmonary complications, suddenly to be carried off by fatal broncho-pneumonia.

THE DRY METROPOLIS.

THE Metropolitan Water Board has intimated to the Ministry of Health that in consequence of the prolonged drought it is necessary at the present time to conserve the water-supplies of the metropolis, and a circular has been issued to sanitary authorities suggesting the restricted use of water for such purposes as flushing sewers or watering streets and recreation grounds. Drought does not strike like lightning and there has been ample warning that London will be short of water this summer. Thames water provides nearly 60 per cent. of the total supply, the Lee coming second with 23 per cent., well-water only yielding the small remainder of 17 per cent.; and during the month of March the average daily natural flow over Teddington Weir was, in round figures, 890 million gallons, or 1230 million gallons below the daily average of the last 40 years. In the same month the rainfall of the whole Lee basin was under 1 inch, and the months before and since have been equally dry. The river reservoirs with their immense storage capacity of nearly 13 thousand million gallons may seem inexhaustible, but with the normal demand they would give out in 50 days; and the band of chalk under the London clay, although full of water like a sponge, only yields what the pumps are capable of raising. Not since 1899 has there been any such drought. We are better off now than then, for the precious fluid is no longer vended to us by a number of competing companies with the interests of shareholders to consider, and timely notice of the shortage will have been given to the Ministry whose business it is to decide in what directions economy may be practised without danger to the public health. Thirty-eight gallons per head, per day, the normal rate of consumption, leaves a wide margin for luxury and waste. The public would like some guidance on where an l how to save water if and when the need arises. Drainage by water carriage is so automatic and fool-proof, street-cleaning by the sanitary authority so regular, that the average citizen develops little personal sense of responsibility for keeping his city clean and sweet. We confess to some misgiving, however, about the economies suggested for a start. The normal sewer flush may be excessive: the Ministry of Health doubtless knows that it is. But to limit street watering just when the season of zymotic diarrhœa is beginning—that is open to question. In 1899 no one could define the effect of drought on the public health: was it the heat, the dirt, or the dryness of the subsoil that was the potent factor? We are not much wiser now; the spectre of epidemic diarrhœa may again overshadow London should July be hot as well as dry. There may be the same spike on the infant mortality chart for 1921 as there was in the hot summer of 1911. Until we have proved that watering the narrow crowded streets does *not* help to keep away summer diarrhœa we are hardly justified in economising there, rather than on baths and leaky taps. The thoroughfares with a minimum of horse traffic and a top dressing of petrol and lubricating oil may probably be left safely to take care of themselves.

PUBLIC HEALTH AT THE LABOUR CONFERENCE.

THE British Labour Party with its three million members, who for the most part are trade-unionists and voters, holds its annual conference on June 21st at Brighton. Though the conference sits for only four days, the agenda paper gives the text of no less than 248 resolutions and amendments, many of them dealing with world politics, diplomatic questions and recondite economic problems, which even the keenest intellects of the day might find it hard to grasp. Only towards the end of the agenda do we reach the question of education, when the Northampton Labour Party is to demand better treatment of school children's teeth, and complains of the almost total lack of any provision for such serious physical defects as spinal curvature, pigeon chest, and of the insufficiency of nursery schools and open-air schools for delicate children. Twelve proposals on the drink problem all, in one form or another, condemn existing public houses. The Carlisle experiment seems to meet with most approval, the sale of drink only being tolerated where food is provided as well as facilities for social intercourse. Several resolutions demand local option and State control of the trade in alcohol. On the housing difficulty, the executive committee has a resolution denouncing the Government for obstructing, during the last two and a half years, the erection of the half million new houses it had promised. The Government is admonished itself to supply the needed material and thus break up profiteering combinations. The Stepney Trades Council proposes the rationing of house accommodation and the stopping of superfluous house building—namely, luxurious dwellings—while others are forced to live in hovels unfit for human habitation. In regard to old age and other pensions, a number of resolutions are tabled to increase the amounts given, several Trades Councils endorsing a scheme for a State bonus to replace existing organisations for providing subsistence in cases of distress by a national pool collected from the national income at its source. The Poor-law, we imagine, itself disappears in the pool. Demands for better organised and more extensive help to mothers and to widows who have the charge of families are perhaps more likely to find immediate acceptance. In fact, the endowment of motherhood, on a more or less extended scale, has already entered the domain of practical politics. With regard to the Workman's Compensation Acts, a resolution advocates compensation for accidents on the same basis as that upon which

[1] Annales de Médecine, Paris, 1921, ix., pp. 161–196.

war pensions are granted; another urges that the schedule of industrial diseases should be extended so as to include coal miners' asthma and other diseases caused or aggravated by the occupation on which workmen were engaged 12 months before they were disabled. Finally, we notice that the National Union of Ships Stewards, Cooks, Butchers and Bakers have come forward with a demand to be included in the advantages already granted to seamen and firemen. One resolution which deserves to be quoted, runs: "In view of the alarming increase of consumption among seamen, this Conference demands an inquiry into the living accommodation provided on board ships." Such are the principal proposals affecting public health, unfortunately smothered in the midst of a political programme of appalling length and complexity. Laws are of little avail if they are not understood and approved by the community, and we rejoice that the Labour Party is turning to the study of health legislation. It is to be hoped that by next year the political situation will have so improved as to enable these matters to be more fully discussed than on the present occasion.

HEALTH OF TROOPS IN THE PALESTINE CAMPAIGN.

General Liman von Sanders, in his apology[1] for the defeat in 1918 of the Turkish Army Group which he commanded in Palestine, urges in extenuation that "there was a great epidemic of disease during the summer months, malaria and dysentery taking a heavy toll of the armies." It was known this must have been so, but it is satisfactory to have it stated by authority, and it shows that in this, as in all wars, a medical service which is ineffective lowers the fighting efficiency of the troops it is supposed to serve. Further, the statement supports the opinion we have already expressed that Lord Allenby's skilfully planned and magnificently successful operations on Sept. 19th, 1918, could not have been set going—there would not have been the troops to make them possible—but for the excellent work of the Royal Army Medical Corps, which planned the anti-malarial measures in the Auja Valley, and so kept the loss of strength from malarial fevers in Palestine, in the worst sector, down to 10 per cent. of the troops in the four months preceding the great attack.

THE Census, which was postponed last April, will be taken next Sunday, June 19th. The names of those dying before midnight on Sunday or born after midnight must be omitted.

THE William Gibson Research Scholarship (Second Award) for medical women has been awarded by the Council of the Royal Society of Medicine to Miss Gertrude M. A. Herzfeld, F.R.C.S. Edin.

THE first British Congress of Obstetrics and Gynæcology, held in Birmingham on June 3rd and 4th, was attended by delegates from societies in Edinburgh, Glasgow, the Midlands, the North of England, as well as from the Royal Society of Medicine. We hope to give an extended notice of this very successful meeting.

THE annual general meeting of the Research Defence Society will be held at the house of the Medical Society of London, 11, Chandos-street, Cavendish-square, London, on Wednesday, June 29th, under the presidency of Lord Lamington. A short address will be given by Dr. H. H. Dale, C.B.E., F.R.S., on the Work of the National Institute for Medical Research.

[1] Journal of the Royal United Service Institution, May, 1921, p. 327.

THE POSITION OF THE VOLUNTARY HOSPITALS.

REPORT OF LORD CAVE'S COMMITTEE.

THE Report of the Committee on Hospital Finance (Lord Cave's Committee) appeared last week, when we published the recommendations. We comment on these in a leading article. An official summary of the document runs as follows:—

1. The present financial difficulties of the hospitals are due to the war. The receipts from voluntary subscriptions, donations, and legacies have not fallen off—on the contrary, they have risen by 67 per cent. since 1913. But during the war the cost of provisions, drugs, dressings, fuel, and labour has increased to such an extent that the expenditure of the hospitals has increased by 138 per cent. since 1913. The aggregate deficits of all the voluntary hospitals of Great Britain for the present year are estimated at £1,000,000 (para. 8).

2. The voluntary system is, therefore, temporarily in jeopardy. The Committee ask, "Is the voluntary system worth saving?" and their conclusion is, "We are convinced that it is." Apart from the immense sum of voluntary subscriptions and donations (estimated at £3,000,000 a year), the voluntary system secures gratuitous and skilled service, both lay and medical, of inestimable value. It preserves freedom in medicine, and is of incalculable advantage to the welfare of the sick, the training of the medical profession, and the progress of medical research. The breakdown of the voluntary system would imperil these services and impose a constantly growing charge upon public funds (para. 15).

3. The Committee are of opinion that if the voluntary hospitals are to be saved immediate assistance must be given by the State, such assistance to be strictly limited to a definite period of two years, and to be given only to hospitals which show that they are taking all possible steps to re-establish their financial position. A grant so limited and conditioned would re-establish the hospitals in the self-supporting position which they occupied before the war, and would not be inconsistent with the maintenance of the voluntary system (para. 16).

4. The Committee draw attention to a number of steps which managers of voluntary hospitals can themselves take to improve the financial position of the hospitals under their charge—e.g., review of expenditure, particularly in the light of comparative costs which could be ascertained by the general adoption of a uniform system of accounts (paras. 24 and 25); coöperative buying of drugs, apparatus, stores, and some kinds of provisions (para. 26); removal of convalescent cases to auxiliary hospitals (para. 27); coördination of appeals for subscriptions (para. 28); further development of new sources of income, such as subscriptions from wage-earners and employers, and other contributory schemes, examples of which are quoted in the Report (paras. 29 to 40); contributions from Approved Societies (para. 43).

5. To give effect to the temporary State assistance the Committee make the following recommendations:—

(1), (2) That a Hospitals Commission and Voluntary Hospitals Committees be formed for the country as a whole, the King Edward's Hospital Fund for London continuing to perform the functions of the latter for the Metropolitan Police District.

(3), (4) That Poor-law guardians be authorised to enter into arrangements as to the use of infirmaries, and that county councils be empowered to contribute to the expenses of voluntary hospitals committees.

(5) That failing the provision in the National Health Insurance Acts of a "hospital benefit," the courts be authorised to award to hospitals compensation under the Employers' Liability and Workmen's Compensation Acts.

(6) That local authorities be authorised to pay the cost of the treatment in hospitals of persons in their employ.

(7) That the payment out of technical education funds of grants for the training of nurses be considered.

(8) That provision be made for obtaining and tabulating returns of cases treated in hospitals.

(9), (10), (11) That all contributions by employers to hospital funds be allowed as deductions from profits for income-tax purposes, that where the payment to a hospital of a testamentary gift of residue is delayed for more than a year, the hospital be authorised to claim repayment of income-tax, and that legacy and succession duty on testamentary gifts to hospitals be remitted.

(12) That Parliament be asked to sanction a temporary grant of £1,000,000 to be expended under the direction of the Hospitals Commission in the assistance of hospitals which require it.

A last clause states that the Hospitals Commission should be authorised during a period of two years to recommend grants for the extension and improvement of hospitals subject to like contributions being made from private sources.

These recommendations if adopted will require legislation or executive action.

MEDICINE AND THE LAW.

The Certification of Lunatics.

IN a recent action tried by Mr. Justice Bailhache, sitting with a special jury, J. R. Gore Brown sued Sir Maurice Craig and Dr. J. Pitcairn, medical officer of Wandsworth Prison, for damages for conspiracy, false imprisonment, and wrongfully certifying him as a criminal lunatic, in consequence of which he was confined in Berkshire County Asylum. After an adjournment for several days in order that witnesses might be called to prove the authorship of a letter produced by the plaintiff, and alleged by him to have been sent by Sir Maurice Craig to the medical officer of the asylum in which the plaintiff was confined, the promised witnesses were not forthcoming, and the jury found for the defendants. The plaintiff's account of a career in which he had been military governor of Sonora, a general in the Mexican forces, and military adviser to President Carranza, of his military services in the war and his adventures with a German spy, has been fully reported. He appears, according to his own account, to have been sentenced to imprisonment upon a charge of dishonesty, and afterwards confined as a lunatic. The letter which, he alleged, was written by Sir Maurice Craig in connexion with this incident began with the sentence: "Dear Sir, In reply to your letter of December 10th in reference to the case of John Radleigh Gore-Brown, it is imperative that he should not be discharged from your asylum at the present time. There is no doubt of his sanity, but there is, as you can undoubtedly see, a very specific reason why he should not be set at liberty—he is a most dangerous man, and is a member of an Esoteric Eastern Order, which have as their object the downfall of the British Empire." There was a good deal more in a similar strain, and in his summing up Mr. Justice Bailhache observed on the internal evidence pointing to it not having been written by Sir Maurice Craig, and suggested that if he had written it he would himself be a fit subject for a lunatic asylum. That the trial should have occupied a judge and a special jury for two days, with an interval of postponement for the plaintiff's benefit, is no doubt creditable to our judicial system, as showing the impartial fairness of our courts, and the unwillingness of our judges to place the plaintiff in person at any disadvantage. Such a case, however, inflicts great and undeserved hardship upon medical men who perform duties essential to the safety of the public and of the individual whose sanity is questioned. Trials in which persons who have been confined in asylums seek for damages are, moreover, frequent. Such unfortunate individuals deserve sympathy rather than condemnation in their resentment at treatment, the necessity for which they do not understand. But the persons against whom they bring actions deserve sympathy still more. A measure of protection that could be afforded to them would be to enable the person confined to appeal within a certain time after his admission to an asylum to an official expert, whose pronouncement on his case should have the finality and privilege enjoyed by a judge of the High Court trying a question of fact. If no action could be brought against such an authority in respect of anything done by him in the performance of his duty, or against any other medical man without his sanction, the medical man consulted in a case of alleged insanity would escape, not the liability to pay damages if he was negligent or acted wrongfully, but the payment of heavy legal charges, in addition to enduring anxiety and wasting time, through having to defend himself against undeserved attack, or such a ridiculous accusation as that brought against Sir Maurice Craig.

Impotence Quoad Hanc.

The bringing in of judges not usually employed in the Divorce Court to relieve the congestion of matrimonial causes awaiting trial has had as one of its results the delivery of a weighty judgment by the Lord Chancellor in a case of a very important class from the point of view of the medical profession. After nearly 10 years of married life, Mrs. Miriam Colman or Hankey withdrew from cohabitation with her husband, and instituted a suit for a decree of nullity of marriage on the ground that there had been no consummation of the marriage and that he was incapable of consummating it. After a prolonged hearing, and after evidence had been given by the parties, by the wife's mother, and by medical men who had examined one or other of the parties, Lord Birkenhead delivered a reserved judgment in which he reviewed the law and the facts. There was, as he described it, an acute contest of fact, as the respondent not only alleged that sexual intercourse had taken place, but also that he had taken steps at one time with regard to making a will in the belief that his wife was pregnant. It was, however, clear from the evidence on both sides that the relations between the parties were not those of normal young married couples. The war accounted for the delay in the institution of proceedings. Lord Birkenhead in his judgment pointed out that the allegation was not that the respondent was generally impotent but that he was incapable of consummating this particular marriage. Doubts had been entertained as to whether impotence *quoad hanc* (that is to say, with regard to the particular woman in question) entitled a woman to a decree of nullity, but, clearly, before and after the Council of Trent, the Church had admitted, and indeed enjoined, nullity on that ground. Recent authority on the point was, however, scanty and he reviewed the various cases decided in the last century in which it had been discussed, referring to the difficulty arising from the parties being the only witnesses on the most important issues. As to this, and the responsibility attaching to the pronouncing of judgment upon the unsupported testimony of the petitioner, the court was not relieved from weighing the evidence, merely because both parties told different stories, one of which must be untrue. He referred to interviews between the petitioner, the respondent, and the petitioner's mother, as to which divergent evidence had been given, as having at any rate taken place, and as showing that up to a certain time difficulties had attended consummation, such as were consistent with the allegation that it had not taken place. With regard to the medical evidence, which he reviewed at length, as to the physical conditions observable in petitioner and respondent, his lordship described it as consistent with the petitioner's evidence and not with that of the respondent. It thus gave him the necessary guidance. Her story might be true. His story could not be true. His lordship, in conclusion, found that the petitioner's story as to the material facts was true, that the marriage had never been consummated, and that over a period of years the respondent had tried unsuccessfully to consummate it. It followed that he had been always incapable of consummating this particular union with this particular woman. There had been no allegation against her of frigidity, denied access, or physical malformation. There will, we think, be a feeling of doubt among medical men on this judgment.

CONTROL OF VENEREAL DISEASE.

THE RED CROSS REGIONAL CONFERENCE.

THE North European Red Cross Conference which was held at Copenhagen from May 20th to 25th, after considering the general measures adopted by the participating countries for the combating of venereal diseases, came unanimously to the following conclusions :—

1. That the provision, by responsible health authorities, of adequate facilities for diagnosis and treatment on lines which insure that the greatest possible number of infected persons is rendered non-infective is a measure of prime importance to the reduction of venereal diseases. The urgent necessity of commencing treatment at the earliest possible moment should be emphasised. It is suggested that the above facilities should be provided free of cost to the patient where they are otherwise unlikely to be utilised to the fullest extent.

2. That the questions of compulsory notification and of compulsory treatment, being dependent on the experience, resources, and psychology of the people concerned in each country, must be decided by individual nations.

3. That instruction, theoretical and practical, in the recognition of venereal diseases, particularly in their earliest manifestations and in their treatment, should form a part of the curriculum of every medical student, and that satisfaction of a test of proficiency in this subject should be a condition of every medical qualification.

4. That provision should be made, at suitable treatment centres, for such instruction of medical practitioners in the diagnosis and treatment of venereal diseases as will enable them to recognise these disabilities promptly and secure their adequate treatment.

5. That regulation and official toleration of professional prostitution has been found to be medically useless as a check on the spread of venereal diseases and may even prove positively harmful, tending as they do to give official sanction to a vicious traffic.

6. That the provision of "hostels" and rescue homes for the temporary care of girls suffering from venereal disease is a valuable means of preventing the spread of these diseases.

7. That the provision of opportunities for wholesome entertainment and recreation is an important factor in reducing the temptation and exposure to venereal infections.

8. That enlightenment of the general public on lines which are best calculated to minimise exposure to infection and emphasise the necessity of thorough treatment is an essential part of any scheme for the combating of venereal diseases. Instruction should particularly be addressed to parents and teachers in such a form as will enable them to give clear information on the reproduction of life and impress on adolescents the importance of individual responsibility to future generations. In the training of teachers special courses on these subjects should be provided.

The Question of Self-Disinfection.

The Secretary of the National Council for Combating Venereal Diseases, which was officially represented at the Conference, writes to us as follows: "A noteworthy point is the fact that the question of self-disinfection, which has appeared such an important and vexed factor in the campaign in England, provoked very little interest at this Conference of experts. Countries that have adopted self-disinfection as a part of their policy, stated, through their representatives, that it was not considered an all-important factor in the general campaign. This is the view taken by our own Ministry of Health according to the leaflet which they issued recently defining their policy. In Germany, where the self-disinfection policy has been pursued in a particularly vigorous manner, the results do not appear to be satisfactory, as venereal disease is spreading amongst the youth of the country in an alarming way. One of the German delegates quoted the following figures for his clinic in a large German industrial town, which has energetically pushed a campaign of self-disinfection for five years.

1919 ..	14 boys ..	60 girls	infected between the ages of 14 and 18 years
1920 ..	105 „ ..	116 „	„ „
1921 ..	33 „ ..	61 „	„ „

(first three months only).

In Berlin the annual number of fresh infections was estimated by the other German medical delegate at 25,000.

State-Controlled Prostitution.

From the same source we learn that the unanimous opinion of the medical experts assembled at the Conference disposed of the fallacy that officially regulated prostitution is desirable for the purpose of reducing disease. Countries which have these so-called controlled establishments have analysed the results of this system since the publication of Flexner's "Prostitution in Europe." Not only is it proved that this system is medically useless as a check on the spread of venereal disease, but it is positively harmful as it gives official sanction to a vicious traffic. The provision of hostels and rescue homes for women and girls, and opportunities for entertainment and recreation, together with a general campaign tending to raise the standard of public morals, are the important means by which venereal diseases can be combated.

Disease amongst Seamen.

The campaign, initiated by the National Council for Combating Venereal Diseases at the first meeting of the League of Nations last year, to enable members of the mercantile marine of all countries to receive adequate treatment for venereal disease received active support at the Conference when the interests of seamen were particularly advocated by the British delegates, and the Conference approved of a detailed scheme providing for the free treatment of seafarers of all countries.

EXTENSION OF MEDICAL SERVICES: INITIATION OF A COUNTY SCHEME.

THE scheme for extension of medical services in the county area of Gloucestershire was formally adopted in April of last year and is now being put into effect. Dr. J. Middleton Martin, county medical officer of health and executive medical officer of the scheme, in a pamphlet of 16 pages issued by the County Council at 1s., describes the essential features of the extension, the genesis of which may be of interest to other sanitary authorities.

Provenance of the Gloucestershire Scheme.

A scheme of out-stations in connexion with general hospitals in the Gloucestershire area was first propounded in a communication made in April, 1918, to the Ministry of Pensions in response to a request for a survey of institutional accommodation. In December, 1918, the Gloucestershire War Disablement Subcommittee passed a resolution in favour of the principle of the scheme, and in the same month a scheme of out-stations in connexion with general hospitals was submitted to the Local Government Board. In January, 1919, a general hospital (Cheltenham) accepted the principle of the scheme, which was about the same time submitted to the Board of Education. In February, 1919, the scheme secured the approval of the Gloucestershire Branch Council of the British Medical Association, and in March the Local Government Board signified approbation of the association of special work of local authorities with out-stations of general hospitals. On May 29th, 1919, the principle of the scheme was approved at a mass meeting of the medical profession in the county, and on the following July 7th it was formally adopted by the County Council. In September, 1919, a grant of £7000 towards capital expenditure was received from the Joint War Committee of the Red Cross. The detailed scheme was formally submitted by the council to the Ministry of Health in October, 1919, and formal approval obtained in April, 1920.

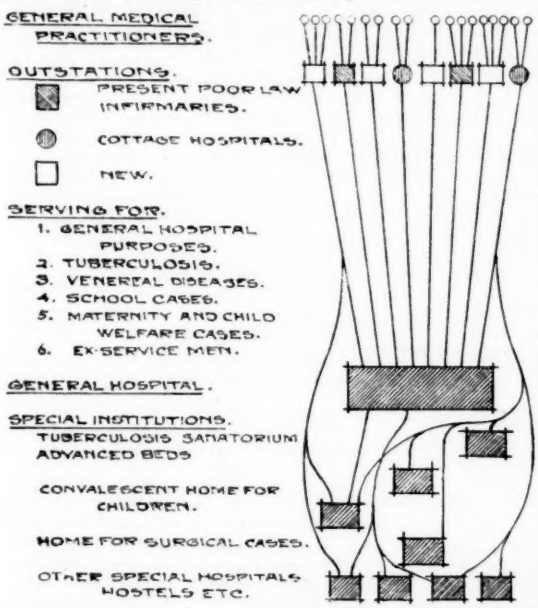
Requirements of a County Area.

The medical needs of a county area are, it is pointed out, much more difficult to meet than those of a large urban centre. Where Bristol has 13,100 persons to the square mile, the county of Gloucestershire has only 268. In a sparsely populated area it is impracticable to establish centres for each class of

case; and while there are administrative advantages in working a scheme by whole-time special officers, it is needful to secure the attendance of specialists for examination and treatment of special groups only. Specialist services are required for consultation rather than routine examination. Based on these principles, the Gloucestershire scheme consists in the opening of out-patient departments at 11 cottage hospitals and 41 new out-stations of the general hospitals (somewhat on the lines of existing tuberculosis dispensaries with consulting room, waiting room, and dressing rooms), so that one will be accessible within a radius of about every three miles of the county. At these out-patient treatment of all the special classes of persons, for whom provision has at present been made at the public expense or may be made in the future, will be available. The usual medical attendants will be the local practitioners, and the specialist staff of the general hospitals will attend periodically for consultation and for the examination of cases reserved for them. An ambulance service will be available for general hospital cases, the out-stations being primarily intended for the special groups of cases whose treatment will be such as can be given in an out-patient department.

Utilisation of Existing Machinery.

In the large general hospitals are to be found the most complete equipment for medical and surgical treatment, and the most highly trained medical, surgical, and specialist services; of these there are four in or bordering on the county. There are also



dotted about the county 11 cottage hospitals and, distributed over the same area, 240 medical practitioners. In the general hospitals will be the consultant services, and through the agency of the smaller hospitals and the medical practitioners, working closely in coöperation with the general hospitals, complete medical services available for the whole area of the county can be provided. Dr. Martin uses a familiar but convenient diagram to express the inter-relations of these various units.

Provisional Scheme of Working.

Openings of Out-stations.—At present each of the 12 out-stations is to be open one day weekly for the attendance of the medical officer at a time to be fixed to suit his convenience and that of the neighbourhood; on other days, at times convenient to the neighbourhood, for intermediate treatment (ordered by the medical officer) by the nurse; periodically, for consultations, at times to be arranged between the medical officer and the parent hospital; at convenient times as a maternity and child welfare centre; at other times as may be arranged by the Board of Management for the convenience of the medical officer in seeing general hospital cases or other groups of patients, or for dental treatment, &c.

Persons eligible for Treatment.—The following classes are eligible for treatment under the scheme: (*a*) school children referred from the school by the medical inspector, the head teacher or the nurse, after reference to their usual medical attendants, who will either provide treatment or advise attendance at an out-station; (*b*) persons with symptoms of, or suspected to be suffering from, tuberculosis and contacts; (*c*) persons liable to be suffering from venereal diseases; (*d*) ex-Service men referred by pensions committees; (*e*) mothers and infants under the maternity and child welfare scheme; (*f*) other groups of patients by agreement between the medical officer and the board of management, on the recommendation of the medical advisory committee. Patients in groups (*a*), (*b*), (*c*), and (*d*) will attend at the times of the regular openings; those in group (*e*) when the out-station is opened as the maternity and child welfare centre, and other groups as arranged in the future.

Duties of Medical Officers.—The medical officer will examine all new cases and either treat them himself or give instructions to the nurse for their treatment; by arrangement with the hospital he will reserve groups for consultation with the special officer; he will keep such simple notes of each case as may be necessary to preserve the records of the various patients.

Duties of Nurse.—The nurse will attend at the out-station with, and assist, the medical officer; she will give such intermediate treatment as he may prescribe; she will keep the register of attendances; and ensure that the out-station is kept in proper order.

Preliminary List of Out-stations.

The out-stations which are or soon will be open for intermediate treatment and for consultations are as follows:—

Bristol Hospital Area.—Almondsbury Memorial Hospital (Monday), Chipping Sodbury Cottage Hospital (Friday), Thornbury Out-Station (John Street) (Monday).

Cheltenham General Hospital Area.—Cheltenham General Hospital (Friday), Chipping Campden Out-Station (Back Ends Road) (available shortly), Cirencester Hospital (Wednesday), Tewkesbury Rural Hospital (Tuesday).

Gloucestershire Royal Infirmary Area.—Berkeley Hospital (Wednesday), Cinderford Out-Station (The Institute) (Tuesday), Gloucestershire Royal Infirmary (Wednesday), Tidenham Out-Station (available shortly).

Stroud Area.—Stroud General Hospital (Tuesday).

The medical officers in each case are the local practitioners; where there is more than one, they take duty for six months in turn.

Tuberculosis Dispensaries are open at Cheltenham General Hospital (Wednesday), Cinderford Institute (Tuesday), Cirencester Hospital (by appointment), Gloucester Provident Dispensary (Tuesday and Thursday), Stroud General Hospital (Monday), Thornbury Out-Station (Friday), Warmley District Council Offices (Friday).

Venereal Disease Clinics are available at Bristol General Hospital, Bristol Royal Infirmary, Cheltenham General Hospital, Gloucester Royal Infirmary, Stroud General Hospital: in each case on two or more days of the week.

Dr. W. Arnott Dickson, to whose practical suggestions the scheme owes much, has been appointed its clinical medical officer.

Consultants Attached to the Scheme.

The following is a list of the consultants attached to the scheme, arranged under the general hospitals to which they belong:—

Bristol Hospitals.—Physicians: R. C. Clarke, Cecil Clarke, C. E. K. Herapath. Surgeons: A. W. Adams, H. Chitty, D. Wood, C. A. Moore, A. R. Short. Ophthalmic surgeons: A. E. Iles, E. H. E. Stack. Ear, nose, and throat: J. P. I. Harty, A. J. M. Wright. Gynæcologists: W. C. Swayne, R. S. S. Statham.

Cheltenham General Hospital.—Physicians: J. F. Johns, J. R. Collins, S. M. Hebblethwaite. Surgeons: J. Howell, J. C. R. Braine-Hartnell, T. Holmes. Ophthalmic surgeon (ear, nose, and throat): N. H. Pike. Maternity and child welfare: H. F. Powell. Radiologist: H. M. Meyrick-Jones. Dentist: G. A. Peake.

Gloucestershire Royal Infirmary.—Physicians: W. W. Grosvenor, D. E. Finlay, H. Cairns Terry. Surgeons: W. Washbourn, C. V. Knight, A. Alcock, R. L. Haines. Ophthalmic surgeon: W. Niccol. Ear, nose, and throat: H. Smurthwaite. Radiologist: J. C. Webb.

Stroud General Hospital.—Surgeons: A. Barnes Davies, A. W. Waller, C. L. Coode, J. C. Marklove.

The estimated cost of maintenance for the year 1921–22 is below £5000. The Ministry of Pensions pays the whole cost for ex-Service men, and the Ministry of Health will make grants of 75 per cent. for venereal diseases and 50 per cent. for other services.

THE CLINICAL UNIT IN OBSTETRICS AND GYNÆCOLOGY AT THE ROYAL FREE HOSPITAL.

THE staff of this unit at the Royal Free Hospital, which is at present the only teaching hospital which has a clinical unit in these subjects, is as follows, all the officers being whole-time:—Director: Prof. A. Louise McIlroy; Senior Assistant: Dr. Gertrude Dearnley; Second Assistant: Dr. Charlotte Houlton; Clinical Pathologist and Registrar: Dr. Dorothea Taylor; Resident Obstetric Officers, three. The beds in the unit number 63, of which 12 obstetrical and 25 gynæcological are in the Royal Free Hospital, and 26 in the Marlborough Maternity Block in Endsleigh-street; of the last a few are allocated to private paying patients. Similarly, a certain number of beds are reserved at the Royal Free Hospital in the gynæcological department for paying patients who cannot afford a nursing home. This does not involve any loss of beds for teaching purposes, since practically all patients pay varying amounts, and all enter the hospital on the understanding that students have access to the wards and may examine patients. Students are not allowed to make vaginal examinations in the wards, but only in a special examination room under the direct supervision of the director or an assistant. One student only examines any case. This applies to all patients, paying or non-paying, and to obstetric as well as gynæcological cases.

Clinical Work.—All students serve as clinical clerks in the obstetrical department of the unit for three months. A certain number of students are appointed as gynæcological clerks for three months under the unit, the remainder of the students serving as gynæcological clerks for another firm, the selection of students being made by a committee consisting of the dean, the warden of the Medical School, the director of the unit, and a senior student. These clerks take the records of the cases and examine the patients under the direct supervision of one of the assistants in small rooms fitted up for the purpose. They also conduct the cases of normal labour under the supervision of the resident obstetric officers. There is a district attached to the hospital where the students attend maternity cases under the supervision of the resident district officer. Students engaged in obstetrics are on duty for 12 hours either night or day. There is therefore no necessity to have special quarters for them for sleeping, but rest quarters are provided, and meals, both for night and day students. Antenatal clinics are held twice weekly for out-patients at the Royal Free Hospital and at Endsleigh-street. Gynæcological operations are performed by the director and her assistants with the help of a theatre nursing staff, working together as a team. Students assist at minor gynæcological operations. Gynæcological out-patients are seen on Saturday mornings at the Royal Free Hospital. Cases specially referred to the director are seen in the out-patients department on Wednesday and Saturday mornings at 10 o'clock. The case records are kept on the general index system instituted by the hospital and are stored centrally, a précis of the case-sheet being kept in the unit for reference when required. The clinical pathologist undertakes the treatment of cases of sepsis occurring in the wards of the unit in order to minimise the risk of carrying infection to other patients, and to free the director and her assistants from contact with septic cases. These cases are isolated in a special department and are not examined by students, who are however, allowed to see the treatment carried out. Cases in the puerperium who have a temperature of 100° F. for more than 24 hours are isolated and treated as septic.

A course of preparatory lectures in obstetrics and gynæcology for junior students is given twice a week by the director. The clinical clerks receive instruction on every case in the unit, and in the out-patients department. The final year students have a tutorial class daily, and a demonstration of operative obstetrics once a week. Special courses of lectures and demonstrations will be given in the winter term for students, and classes for post-graduates will also be held. A course of lectures on the Physiology and Psychology of Reproduction will be held by the director for post-graduates and senior students once a week, beginning in October, 1921.

Pathology.—There is a laboratory attached to the unit for the use of the medical staff for purposes of research; the main routine pathological work is done in the general pathological department. Special demonstrations in gynæcological pathology are given by the director of the pathological department of the hospital and by the clinical pathologist of the unit.

Public Health Services.

LONDON COUNTY COUNCIL ESTIMATES.

THE London County Council has passed a series of estimates totalling £645,711 in respect of the public health services of the metropolis. From the details given below it will be seen that by far the heaviest individual items were those for treatment of tuberculosis (£349,000), and diagnosis and treatment of venereal diseases (£115,100). The full details are as follows:—

	£
Public vaccinators	2,500
Sanitary officers	82,427
Registrars of births and deaths	509
Poor-law medical expenses	85,000
Treatment of tuberculosis (residential)	331,500
,, ,, (dispensary)	17,500
Diagnosis and treatment of venereal diseases	115,100
Milk-supply (tuberculosis)	2,965
Infant life protection	6,540
Precautionary measures against spread of epidemic diseases	20
Lying-in homes	60
Public health administration	100
Special county public health administration, including enforcement of Dairies, Cowsheds, and Milkshops Orders	665
Common lodging-houses and seamen's lodging houses	750
Miscellaneous expenses	75

SCHOOL MEDICAL INSPECTION.

Reading.

The first report issued since October, 1920, when the school work was undertaken by whole-time instead of part-time officers, deals mostly with the work under the part-time system. Dr. H. J. Milligan now combines the work of the public health and school medical departments with the help of two whole-time assistant school medical officers, and of Dr. J. A. P. Price, who still gives part of his time to the work. There are 14,752 children in attendance, and of these 4290 underwent routine medical inspection; 64, or 1·5 per cent., were found to be suffering from malnutrition; 139, or 3·2 per cent., from defective vision; and 158, or 3·7 per cent., from enlarged tonsils or adenoids. 19 children suffered from defective hearing, and 25 from otitis media. 154, or 3·6 per cent., were found to be unclean either in head or body. 238 children attended the ophthalmic clinic throughout the year, and for 167 of these Dr. Price prescribed glasses; the Education Authority provided glasses for 144, a considerable proportion of the expense being recovered from the parents. Playground classes are held in practically all the schools, while two schools arrange school journeys of a fort-

night's duration. The open-air school is solely for children who suffer from tuberculosis in one form or another, but the cases are mainly pulmonary. There is an interesting table showing the after careers of children who have attended the physically defective, the open-air, and the mentally defective schools. Of the 77 girls attending the continuation school 7 were unclean, 1 suffered from spinal curvature, and 5 from flat foot.

Eastbourne.

In Eastbourne the public health school and infant welfare work are well coördinated. The school medical officers are also public health officers, and three out of the four nurses employed devote part of their time to infant welfare work. In addition, there are eight part-time medical officers. The adaptation into an open-air school of six army huts, with accommodation for 50 children, surrounded by a large area of open ground, is the outstanding feature of the year, and was foreshadowed in Dr. W. G. Willoughby's previous report. The results have already been so good that Dr. Willoughby suggests an extension to the school. Dinner is provided for all the children in attendance, and certain of them have milk in the morning. This school is a valuable asset to the tuberculosis and malnutrition clinic, where 92 children made 263 attendances throughout the year. The results of medical inspection in the continuation schools are interesting. The percentage of defects is high (41 per cent.), the number requiring treatment and observation being about equal. Dr. Willoughby writes: "I attribute the large number of deformities, many of them slight but still interfering with the perfect health of the individual, to the lack of systematic physical training in the elementary schools curriculum. It is obvious, I think, that the children do not get sufficient physical exercises. If they did there could not have been the number of misshapen spines and flat feet." Dr. T. Turner reports that having examined every boy in the secondary school, and four months' later having re-examined the cases noted for observation, he finds the general physique of the school good. He was struck by the almost complete absence of spinal curvature. Among the boys of the continuation school he finds the physique poor, especially among errand boys, and a large number of the latter suffered from flat foot. He attributes these physical defects to the fact that these boys attend school only twice a week, and therefore get no systematic training and spend litt'e time in organised games.

Dewsbury.

2376 children underwent routine examination during 1920. 151 of these were found to be suffering from defective vision, 42 from defective teeth, 51 from defective conditions of nose and throat, 1 from speech defect, and 3 from pulmonary tuberculosis. Dr. Oscar Holden reports that if pulmonary tuberculosis looms largely in the returns of a school medical officer doing routine school inspections one must perforce believe that officer to have a bias, and not necessarily believe that tuberculosis is rife in any particular school. The report contains the interesting statement that the condition of teeth in the industrial towns of Yorkshire and Lancashire is considerably inferior to that seen in the agricultural classes of the south. "Whether the softness of the water, or the general hygienic surroundings, or the character of the food plays the most important part it is very difficult to say. An investigation carried out by me in regard to the dietaries of children with sound and unsound teeth revealed no difference. Bad teeth seem to be a family characteristic, an inherent tendency rather than a circumstance of environment." Glasses were prescribed for 110 children and obtained by 98. Provision is being made for carrying out remedial exercises at the new clinic. This will be undertaken by the organiser of physical culture under the direction of the school medical officer.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Warning to Would-be Medical Students.

STUDENTS who have just completed their middle school course, having passed the "maturity" examinations, are being circularised with an appeal not to enter upon the study of medicine. The chief reason offered is the unfavourable financial condition of an exceedingly large percentage of physicians, consequent on the loss of two-thirds of the territory of Hungary by the Trianon peace treaty. Formerly patients poured into Budapest in vast numbers from the provinces. From every corner of the land doctors sent their patients for special treatment and consultation. But now patients from the occupied territories are prevented from coming to Budapest by technical obstacles. First of all there is the compulsory passport system; to procure a passport and necessary *visa* takes much time and expense. In fact a journey to Budapest from the occupied territories must be regarded as a luxury; for instance, the journey from Oradea Mare (late Nagyvarad), altogether 200 kilometres (about 130 miles) from Budapest, which took four hours by fast train before the war, with a service of seven to eight trains a day, now takes 24 hours. From Oradea Mare one has to go either by carriage or by automobile to Bors, the Roumanian custom station; thence by foot to the Hungarian boundary; thence by carriage to Kerentes; and thence by railway to Budapest. This roundabout journey has to be made because the direct railway line cannot be used for lack of interchange of railway engines and cars. The facts commented on in the circular are: (1) the surplus of medical men beyond the demand; (2) the abrogation of the laws against practice by the incompetent; (3) the legislation for the various sick clubs. The number of physicians in Budapest alone amounts to 2000, while in 1913 the number was slightly over 1000. Thus the number has more than doubled in eight years, and the prospects are that it will grow still larger. A further reason for avoiding the study of medicine given by the circular letter is the addition to the course of a "practical year," whereby the expenses of preparation for the profession, already very costly, are still further increased.

A Case of Boric Acid Poisoning.

The popular fallacy that boric acid is innocuous to the system is contradicted in a case which occurred two weeks ago in a Hungarian village. The patient, a man aged 23, suffered from bilateral inguinal adenitis, which had been incised, by a surgeon in the next town, and the patient went home with instructions how to dress his wounds. However, the patient, who had been in the sanitary service during the war, remembered that boric acid powder was administered in cases of suppurative mastoiditis. This recollection induced him to pack the cavities of his buboes with boric acid powder. He used for this purpose about 150 g. Soon afterwards the man developed the typical signs of boric acid poisoning, profuse vomiting, a papular rash over the face, neck, and chest, and a weak irregular pulse. The onset was rapid and the fatal issue came on within four days. There was also delirium and slight rise of temperature. Post-mortem examination showed congestion of the liver, spleen, and gastro-intestinal tract, and cloudy swelling and granular degeneration of the liver and kidney cells. There were also subpericardial hæmorrhages, together with discoloration and maceration of the tissues about the cavity in which the boric acid was placed. These findings limit the cause of death to a toxæmia resulting either from the abscess in the groin, or from the medicinal agent employed, as other recognisable causes were not present. Its resem-

blance to other cases previously reported (the last one described by Dr. C. I. Best in America), together with the demonstrated over-use of the drug, was sufficient for the diagnosis. The clinical features and the lack of success in cultivating pathogenic bacteria from the blood eliminate septicæmia, which is the condition most likely to be simulated in such a case.

Serum Treatment of Articular Rheumatism.

Dr. Radvanyi (Transylvania) states that better results in the treatment of acute and chronic articular rheumatism have been obtained from the use of antistreptococcus serum than from any other medicine. Chronic cases, if not cured, are materially improved, and in acute cases an endocarditis will heal more rapidly. As proof of the latter fact a case is cited which presented well-marked increase in cardiac dullness with presystolic murmurs at the apex during an acute attack; two years after treatment there were no longer any definite signs of endocarditis. Since the serum may render acute a chronic inflammatory process, Dr. Radvanyi says it should be used with caution in pericarditis, marked pleurisy, or advanced mitral stenosis. In acute cases single doses of 5 c.cm. should be employed (strength of the serum according to the severity of the symptoms), while if chronic, several periods of treatment are necessary. The other measures employed for rheumatism are also in place, but salicylates need not be given while serum treatment is being employed.

May 28th.

Obituary.

JOHN MATTHEW FORTESCUE-BRICKDALE,

M.D., B.CH. OXON., M.R.C.P. LOND.,

PHYSICIAN TO CLIFTON COLLEGE AND TO THE BRISTOL ROYAL INFIRMARY.

WE briefly recorded last week the death at an early age of Dr. J. M. Fortescue-Brickdale, in whom medicine as an art and medicine as a science were well blended. Born in London in 1869, son of the late Mr. Matthew Inglett Fortescue-Brickdale, conveyancing counsel to the Court of Chancery, he was educated at Dulwich College—where his literary bent already found expression in a school paper of a satirical character entitled "The Culex"—and at Christ Church, Oxford, receiving his medical education at Guy's Hospital. Of this period of his life one of his friends relates:—

J. M. Fortescue-Brickdale came up to Guy's from Oxford in 1892, and for seven years was one of the most popular men in the hospital. His personality was effective; his smooth black hair, short-sighted eyes, and precise, rather drawling speech, marked him at once as a man out of the common rut of his fellows. Of wide education and interests, musical, artistic, and Athenian in his pursuit of all new things, whether in medicine or the humanities, he was an amusing companion and a keen and critical worker. He took a prominent part in the social life of the hospital, and was a brilliant and frequent speaker at the hospital debating society, where he would champion any cause which, by verbal sophistry, could be made to appear unpleasing to the Philistine. Brickdale was one of that small group who founded a short-lived but famous publication "The Guyoscope," which in its day satirized the staff and school of Guys, and contained witty articles on men and medicine, highly appreciated by those who knew the sly allusions. At any reunion of Guy's men it was always a scramble to get near "Forty" when he made one of his rare appearances, for age and work did not diminish his charm or lessen the affection with which he was regarded by his old hospital contemporaries.

Graduating M.B., B.Ch. at Oxford in 1898, he became clinical assistant, and afterwards house physician, at Guy's Hospital, leading on to his selection as school doctor at Uppingham. Upon resigning this appointment in 1903 he settled in Clifton. Soon after his arrival there he became assistant physician to the Royal Hospital for Women and Children. Later his interest in pharmacology, particularly in relation to organic compounds, obtained for him the distinction of being madt lecturer in pharmacology at Oxford while residene in Bristol, where he directed the public health laboratory attached to University College, and demonstrated physiology.

In 1908, Dr. Fortescue-Brickdale was elected assistant physician to the Bristol Royal Infirmary, a further link in the connexion between his family and the infirmary. As long ago as 1766 Matthew Brickdale, by virtue of his uncle's legacy of £200, obtained for himself and his heirs the "power and privelage" of perpetual subscribers. In 1840 Dr. Fortescue-Brickdale's grandfather successfully claimed this right, and in 1867 his father's name was entered on the list of life trustees. A family interest in the institution which had thus existed for more than a century and a half was thus cemented when Dr. Fortescue-Brickdale became a member of the honorary staff. His devotion to the Royal Infirmary amply upheld the tradition of his forbears; for a number of years he was lecturer and examiner to the nursing staff, and his experience in this capacity bore good fruit in the last book he published before his death, "A Text-book of Pharmacology and Medical Nursing for Nurses."

Fortescue-Brickdale served in the war as a Captain, R.A.M.C. (T.), first at the 2nd Southern General Hospital in Bristol and later for about two years in France, where he was for some time in medical charge at the Michelham Home at Cap Martin. Whilst in France he contracted a severe illness, the effects of which, it is believed, shortened his life. On his return to home service he had charge of a special centre for chest wound cases, on which he published a report in the *Quarterly Journal of Medicine* in 1918. Apart from this and some work on children's diseases, his writings were chiefly devoted to the chemistry and therapeutic actions of drugs. Collaborating first with Prof. Francis in a "Chemical Basis of Pharmacology," he brought out in 1910 a "Practical Guide to Newer Remedies," and later (jointly with Mr. H. G. Armstrong) a book on "Infectious Diseases in Schools." He contributed a number of therapeutic articles to the "Practitioner's Encyclopædia of Medical Treatment."

For the past seven or eight years Dr. Fortescue-Brickdale acted as physicain to Clifton College, and found there most congenial work. He watched over the health of several hundreds of boarders with the most particular care; again and again, by taking suitable measures at the first beginning of an illness, he was able to avert serious consequences. His surgical colleague on the staff writes of him as very sane in his diagnosis and treatment. "He made lots of friends and no enemies, although he was one of those men who have not the gift of advertisement, and few knew how good he really was. During the weary months of his last illness the true qualities of the man shone out nobly; none of those about him are likely soon to forget his uncomplaining patience and Christian courage."

Fortescue-Brickdale was a man of many interests, widely read and endowed with considerable literary gifts. He was an active member of the editorial committee of the *Bristol Medico-Chirurgical Journal*, where his colleagues found his eclectic taste of singular value. There are few charming little bits of verse from his pen. He loved music and played the violin well for an amateur, regularly taking part at Oxford in the quartets at the medical reunions held in the rooms of the late Dr. Mee. As a colleague he won universal esteem, total absence of self-seeking endearing him to all with whom he worked or came in contact. One note of appreciation which we have received ends: "He was an upright, staunch man, whose untimely death leaves his colleagues with a sense of intimate and personal loss."

Dr. Fortescue-Brickdale leaves a widow and two sons.

Correspondence.

"Audi alteram partem."

THE SALE OF DISINFECTANTS.

To the Editor of THE LANCET.

SIR,—May I supplement the most useful article on the subject of the sale of disinfectants in your issue of May 14th by a fact which may not be known to many of your readers? Under the Poisons and Pharmacy Act, 1908, all of those disinfectants which contain over 3 per cent. of carbolic acid and its homologues have to be labelled "poisonous," and so may not be sold except by chemists. But comparatively useless material of feeble disinfectant value, with not more than 3 per cent. of carbolic acid and its homologues, need not be so labelled, and may be sold at oil and grocery shops and stores. The Act therefore tends to favour the sale of these low-class disinfectants, for the public buys more disinfecting material from oil and grocery shops and stores than from chemists. It is not generally realised that when such disinfectants are bought at oil shops, &c., the purchase under present conditions must be of a low-grade article, which, if it disinfects at all in the circumstances of its use, is an uneconomical purchase having regard to the large amount which must be employed.

If these handicapping circumstances are not to operate against the sale of the most efficient (and cheapest) disinfectants, the above facts must be kept in view by those who advise the public in the use of these articles. The resolution referred to by the writer of the article, as proposed by me and carried at the Birmingham Congress of the Royal Sanitary Institute last year, was designed to protect the public against the sale of useless material and misrepresentation, so far as disinfectants are concerned. The resolution has been endorsed by a majority of all county borough councils—to whose verdict it has been submitted; and not a single council has had anything to say in disapproval.

I am, Sir, yours faithfully,

HENRY KENWOOD.

University College, London, June 11th, 1921.

CHRONIC TROPICAL ULCERATION IN EUROPEANS.

To the Editor of THE LANCET.

SIR,—In certain tropical areas a chronic ulceration of the lower limbs has been observed which gives rise to considerable trouble in treatment, and to a somewhat important point medico-legally. My experience of this trouble is confined to two areas: Cocos, in the Indian Ocean, and Perim, in the Red Sea. In both these places the lesion is exactly similar in onset, course, and result, and is known locally as Cocos or Perim sore. The ulceration is confined to the lower limbs, and commences either as some small skin abrasion or by a small vesicle. The course is rapid, the ulceration spreads quickly, the surrounding skin becomes inflamed, and a dark crust forms over the necrosed skin. On removal of this crust a deep punched-out ulcer is found, the bottom of clean pink granulations with piled up skin surrounding it. This is very sluggish in healing and is liable to break down on the slightest provocation. On healing there is left a dark-coloured cicatrix, very lasting, that is almost identical with a syphilitic scar. No pyogenic organisms are found, and self-inoculation was negative in result. Both Castellani and Stitt seem to look on these ulcerations as mostly syphilitic in origin; but this seems to me too great a generalisation. In some marked cases this origin is practically impossible; in others, extremely improbable. Rather does the lesion seem to come under the "deficiency" group. In support of this view, one deduces certain facts. An identical ulcer does not appear in the natives in these regions. A free supply of fresh vegetables and fish at Cocos reduced the trouble by at least 50 per cent. This ulceration in Europeans never occurs in areas except where the ordinary diet is unavoidably restricted. It is quite possible that, given the bodily condition for the development of the complaint, the local structure and conditions may aggravate it, as, in both these areas (coral and coral c. larva) undoubtedly sea-bathing is an intense irritant. In both these places a similar small but very painful ulceration is often set up in the mucous membrane of the inner ear after contact with sea-water.

The most effectual treatment of the complaint seems to be the packing of the ulcer with lot. rubra, with occasional application of hyd. perox. and ung. protargol, 7 per cent. The medico-legal point is that, from a life insurance point of view, the peculiar and persistent coppery-stained cicatrix is, by an unwarned observer, naturally taken for syphilitic. I am personally aware of a case which was rejected as an ordinary risk, and considerable family unpleasantness caused, in a young man whom I myself treated for these sores, and who was, I am convinced, never infected syphilitically. It would be interesting to hear if any other observers in similar area can be induced to give their views.

I am, Sir, yours faithfully,

B. E. EDGE,

May 25th, 1921. Port Medical Officer, Perim.

THE TREATMENT OF DIABETES.

To the Editor of THE LANCET.

SIR,—In your issue of April 23rd there is a review on my book on "Diabetes." I cannot agree with the reviewer regarding the statement that sodium nitro-prusside is a better test for aceto-acetic acid than for acetone. It may be unfortunate that we may get a positive reaction with sodium nitro-prusside where diacetic acid or acetone is present, but there are thousands of cases where we get a positive reaction for acetone and find no diacetic acid, either with Gebhardt test or ferric chloride, or whatever other test we may employ. Again, out of about one thousand cases I have come across three to four that gave a positive reaction for diacetic acid and no reaction with sodium nitro-prusside for acetone.

I am, Sir, yours faithfully,

New York, May 24th, 1921. PH. HOROWITZ, M.D.

THE FEDERATION OF MEDICAL AND ALLIED SOCIETIES.

To the Editor of THE LANCET.

SIR,—In your issue of June 11th the General Secretary of this Federation draws attention to the fact that at their late dinner what he terms "the right hand of fellowship" was held out to the British Medical Association; and he adds, with regard to these two organisations, that "one is primarily concerned with the interests of the patients, and the other with those of the doctor." So far as my knowledge goes, the British Medical Association has repeatedly stated that the interests of the patients and the doctors are one, and that in safeguarding one it is acting similarly to the other. It would not admit any such division of interests as possible either in its central or local organisation; no more than it would in the bedside association of the two concerned. May one venture to know why it has become necessary now to champion the patients' interests by forming a federation; and also how and to what extent these patients are directly represented on the councils of this new body? The Association stated in 1919 that, if loyally supported by the medical profession, it is in a position to carry successfully into effect all the aims and objects of the Federation. It is a little difficult to appreciate how a group of societies, formed for the advance of scientific subjects alone, can be

expected to become suddenly capable of handling successfully medico-political questions, whether such questions relate to the doctor or patient or both. Would it not be far better for doctors to support on the one hand the Royal Society of Medicine for the science attainment, and the British Medical Association for the medico-political aspirations, rather than to butt in with a new and inexperienced conglomeration?

I am, Sir, yours faithfully,

Hove, June 12th, 1921. E. ROWLAND FOTHERGILL.

*** We publish Dr. Fothergill's letter with pleasure, but the societies allied to the Federation cannot be described as "formed for the advance of scientific subjects alone," and this fact interferes with his main argument.—ED. L.

THE DANGER OF ATHLETICS FOR GIRLS.

To the Editor of THE LANCET.

SIR,—I have been much interested in the recent correspondence, both in the daily press and in THE LANCET, on the subject of athletics for women. During the last five years I have had the opportunity of examining all the students at one of the largest physical training colleges for women, both on their entrance into the college and at the end of each term's work.

Miss C. Cowdroy, in her letter to THE LANCET of May 14th, makes the following statements with regard to physical experts, that "they frequently suffer from heart trouble . . . or from displacements of some kind. Sometimes the monthly disability stops for long periods." I should like to say that I have never come across a single case of heart strain, or of displacement of an organ. The amenorrhœa which occurs during term time, in about 1·5 per cent. of the students, is never permanent, and has never to my knowledge produced any ill-effect, whereas the cases of dysmenorrhœa (which is very uncommon among this class of girl) have frequently been distinctly benefited.

Miss Cowdroy further states "that the attitude of these women to life is frequently not a normal one, their mentality is not healthy." She also speaks of "the curious influence exerted by some of these women on girls, neurotic girls seeming obsessed by them." That such women do exist is certainly true, but to say that the condition is due to the practice of athletics seems to me to be making a very unfair assumption. The cause so far as it is possible to apprehend it at all is probably a very complex one, connected with the social conditions of the time, the excess of the female population over the male, and in particular to the conditions, of necessity, prevailing in boarding schools and resident colleges, in which numbers of women live together without any male society whatever. It is these circumstances which tend to make the teaching profession, but not any particular branch of it, especially prone to produce this type of woman. My experience with regard to the students at this physical training college has been that they are the most natural and normal girls that could be desired. I have on several occasions in conversation with members of the staff commented on the simplicity of the students and their youthful and healthy outlook, and they have invariably agreed with me. These girls certainly compare very favourably with the ordinary flapper and average college student.

Miss Cowdroy says "their marriages are often childless." Such an observation is, of course, of no value. Owing to the diversity of factors involved it would require years of research and a multiplicity of data before any accurate statement on the effect on the birth-rate of any one particular class of training could be made. Everyone admits that excess in physical training is to be deprecated, especially in the case of growing girls and boys, but I do not think that there is at present any evidence that athletics are practised to excess in girls' schools.

The question which, in my opinion, educationalists ought very seriously to consider is whether the daily school curriculum, particularly for girls of 14 to 17 years of age, is not too strenuous, and whether more time ought not to be allowed for complete relaxation and recreation. The time-table in many schools consists of full morning and afternoon sessions, followed by 2 to 2½ hours home-work. Even when 2 to 3 hours a week are apportioned to gymnastics or games it seems to me that such a curriculum constitutes far too great a strain on the average girl, and that it is not conducive of the best results from a physical, intellectual, or even examination point of view.—I am, Sir, yours faithfully,

MARGARET G. THACKRAH.

New Cavendish-street, W., June 4th, 1921.

THE VALUE OF SANATORIUM TREATMENT.

To the Editor of THE LANCET.

SIR,—In your issue of June 4th Dr. J. M. Johnstone claims that sanatorium treatment holds the premier place in the treatment of tuberculosis and stigmatises as astonishing the conclusions, recently arrived at by a tuberculosis officer, that cases do better in their homes. One wonders whether his experience extends to the treatment of patients of the working classes. When an attempt is made to trace after-histories, dispensary practice shows that the results of sanatorium treatment are disappointing, and the final result in those who have had it is little better than in those who have not. It is a common occurrence for patients to go downhill rapidly six months after discharge from a sanatorium as improved or much improved. This result is not the fault of the sanatorium, but rather of a system which tends to label that institution as the sheet-anchor in the treatment of the disease.

It has been stated frequently that most of the treatment of a working-class patient with tuberculosis must be carried out at his own home, and in my experience some undoubtedly do better in their own homes, and do not need institutional treatment. Give him a short period of educational treatment at a sanatorium by all means, or send him because he believes in the "cure," but he cannot stop sufficiently long to bring about a cure. Modern opinion makes resistance the keynote to the treatment of the disease. Cannot our efforts be concentrated on raising resistance in the home? Better food and adequate rest seem to be most important factors, and the working man is slowly getting both. There are other factors, of course, but I am not convinced that the sanatorium holds the premier place any more than housing does.—I am, Sir, yours faithfully,

Metropolitan Borough of Wandsworth Tuberculosis Dispensary, June 7th, 1921. F. G. CALEY, Tuberculosis Officer.

DIGITALIS AND THE PERIPHERAL CIRCULATION.

To the Editor of THE LANCET.

SIR,—Your correspondent, Dr. W. J. Grant, whose letter appeared in THE LANCET of June 4th, has not grasped the principles on which the conclusions arrived at in my paper have been based. In order to form a clear conception in regard to the pharmacology of digitalis it is necessary to have a clear idea as to the meaning of systolic, diastolic, and pulse pressure. Obviously, it is the increased pulse pressure which effects an increased volume of flow per unit of time at a time when both systolic and diastolic pressures are lower than normal. The more complete emptying of the veins near the heart which takes place owing to the greater systolic output may also affect the flow of the blood through the peripheral circulation to some extent.

I have already dealt in my paper with the problem of dilatation of capillaries, &c., to which I should like to refer your correspondent. Incidentally, I should like to state that already the old physicians observed an alteration in the character of the pulse after digitalis, doubtless due to the increase in pulse pressure which this drug effects. The observation was made by the simple method of feeling the pulse. Sir James Mackenzie, however, for whom sometimes facts do not exist which cannot be determined by his favoured methods, ridiculed the idea of a "digitalis pulse."

I am, Sir, yours faithfully,

Liverpool, June 10th, 1921. I. HARRIS.

THE INHERITANCE OF ASTHMA.

To the Editor of THE LANCET.

SIR,—In his lecture on asthma, reported in THE LANCET of May 28th, Dr. A. F. Hurst shows clearly that this disorder is heritable, quoting Hyde Salter's 217 cases in which 39 per cent. were inherited. Before the modern researches as to the pathogenesis of asthma this fact of its inheritance could hardly attract the attention of the Neo-Lamarckian. But now that it is known that there are at least two factors which may operate in producing asthma, toxic idiopathy and an irritable bronchial centre, and that "in half of Walker's cases beginning after the age of 50 the patient was sensitive to a protein with which he came in contact as a result of his work"—for example, bakers, ostlers, coffee-sifters, and chemists—there is strong presumptive evidence afforded of an acquired character being inherited. Mendelians may wish to analyse the transmission of an irritable bronchial centre and a toxic idiopathy by their special laws of genetics, but, even if they find an answer, it would still leave the initial variation in question unexplained, whereas the facts would be strictly in keeping with Neo-Lamarckism. If their Neo-Darwinian opponents cannot refute the facts stated they must allow this instance to the Neo-Lamarckians.

I am, Sir, yours faithfully,

Cheltenham, June 8th, 1921. WALTER KIDD.

A DEVELOPMENTAL ANOMALY.

To the Editor of THE LANCET.

SIR,—An annotation which appeared in your issue of May 28th dealt with two anatomical freaks, but neither of them was quite such a freak as the normal fœtus of your second note which thickened its ectoderm at the fourth month, and to which a lot of things happened at 13 months.

I am, Sir, yours faithfully,

St. Mary's Hospital, W., June 7th, 1921. J. ERNEST FRAZER.

*** We plead guilty to a slip so obvious that it could hardly mislead the reader. *Month* should, of course, read *millimetre*.—ED. L.

A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—My name was not mentioned in the *Daily Mail* of June 13th in the article "Do Eyes Radiate Energy?" and I write to state that the information was given to the *Daily Mail* by someone amongst the manufacturers to whom the work had to be shown for the production of instruments. This was without my knowledge and against my wishes. The work is on the eve of announcement in the medical and scientific press, and is to be demonstrated at the Ophthalmological Congress at Oxford on July 7th. I must point out, as the author, I am annoyed at such a breach of confidence.

I am, Sir, yours faithfully,

CHARLES RUSS, M.B., &c.

Beaumont-street, W., June 13th, 1921.

Medical News.

UNIVERSITY OF CAMBRIDGE.—*Third Examination for Medical and Surgical Degrees.*—The Registrary desires to call the attention of the tutors and prælectors of colleges and of the deans of medical schools to the report of the Special Board for Medicine of May 4th, 1921 (*Reporter*, p. 953), recommending important alterations in the times for the sending in of the names of candidates for the third examination for medical and surgical degrees, and for the presenting of certificates for the third examination for medical and surgical degrees. All medical students should be instructed to substitute the words thirty-first for tenth or thirty-one for ten, and thirty-one days for three weeks on pages 11, 17, 35, 36 of the Regulations and Schedules for Medical and Surgical Degrees. The additional fee for late entry is £2.

UNIVERSITY OF OXFORD.—Dr. Ernest Mallam, Magdalen College, has been appointed Litchfield Lecturer in Medicine for two years as from Oct. 5th, 1921.—Dr. Leonard Hill, F.R.S., has been reappointed Examiner in Animal Physiology in the Final Honour School of Natural Science.—The following have been re-elected members of the Board of the Faculty of Medicine: Dr. E. W. Ainley Walker, Fellow of University College; Dr. James H. Thursfield, Trinity College and St. Bartholomew's Hospital; Dr. Claude G. Douglas, Fellow of St. John's College.

Diploma in Public Health.—The following passed in Part I.: H. L. Coulthard, E. ff. Creed, S.-el-D. A. El Daab, A. Hunter, J. B. Kirk, N. B. Laughton, E. Newton, S. G. Overton, A. J. Partridge, E. G. Rawlinson, W. G. Southey, C. J. Todd, M. P. Wilson. The following passed in Part II., and received the diploma: H. L. Coulthard, T. J. Lloyd, G. W. Ronaldson, C. W. Sharpley.

UNIVERSITY OF MANCHESTER.—Mr. D. N. S. Watson, M.Sc., a former student of the University, has been appointed to the Jodrell Chair of Zoology and Comparative Anatomy in the University of London.—The following appointments have been made: Assistant Lecturer in Botany, Mr. Samuel Williams; Demonstrators in Pathology, Dr. P. I. C. Gibson and Dr. A. Haworth; Demonstrators in Anatomy, Dr. Georgina May Duthie and Dr. R. C. Shaw.—The Turner Medical Prizes have been awarded to Mr. G. V. Ashcroft and Miss Margaret Single.

UNIVERSITY OF BRISTOL.—Sir Isambard Owen is resigning his position as Vice-Chancellor of the University of Bristol, a position he has occupied with conspicuous success since the foundation of the University. His resignation is due to the fact that he is approaching the age limit laid down by the Treasury rules. Sir Isambard Owen brought to the new University experience gained at St. George's Hospital, at the University of Wales, and at Armstrong College, Newcastle-on-Tyne, of which he was Principal till he came to Bristol in 1909. Since that time the University has increased steadily, not only in numbers and material assets, but also in the width of its appeal to the surrounding counties, and it is this policy of broadening the basis of interest in its work for which the University is principally indebted to Sir Isambard Owen.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—A meeting of the Council was held on June 9th, Sir Anthony Bowlby, the President, in the chair. The Council passed a vote of congratulation to Sir Arthur Keith, Conservator of the Museum, on having received the honour of knighthood.—A report was read from the Court of Examiners respecting candidates found qualified for the Diploma of Fellow, and the diploma was granted to the following 25 candidates (including one woman):—

K. B. Bellwood, Cambridge University and St. Bart.'s Hosp.; E. C. Bowden, London Hosp.; G. N. Brandon, St. Thomas's Hosp.; G. W. Carte, Oxford University and St. Bart.'s Hosp.; H. Cors, R. Coyte, and S. G. Dunn, St. Bart.'s Hosp.; J. A. W. Ebden, London and Westminster Hosps.; Satapriya Ghosh, Calcutta and London Hosp.; J. B. Haycraft, Edinburgh and University and St. Thomas's Hosp.; S. N. Hayes, Middlesex and London Hosps.; O. S. Hillman, Middlesex Hosp.; J. B. Hunter, Cambridge University and Univ. Coll. Hosp.; C. M. Jones, Westminster and St. Bart.'s Hosps.; O. P. M. Kelly, London and Westminster Hosps.; T. P. Kilner, Manchester University and St. Bart.'s Hosp.; C. Lambrinudi, Cambridge University and Guy's Hosp.; H. M. Livingston, Durham University and St. Mary's Hosp.; R. P. S. Mason, Middlesex Hosp.; R. L. Newell, Manchester; H. C. W. Nuttall, Liverpool University; K. G. Pandalai, Madras University and London Hosp; R. H. O. B. Robinson, Cambridge University and St. Thomas's Hosp.; F. W. Watkyn-Thomas, Cambridge University and St. Bart.'s Hosp.; and H. W. Wookey, Toronto University.

Mr. James Sherren and Mr. J. Bathe Rawling were elected as members of the Court of Examiners.—The following were elected members of the Board of Examiners in Anatomy and Physiology for the Fellowship for the ensuing year:—Anatomy: Arthur Ralph Thompson, John Ernest Sullivan Frazer, Gordon Gordon-Taylor, and William Frederick Haslam. Physiology: Herbert Willoughby Lyle, Francis Arthur Bainbridge, Arthur Rendle Short, and John Mellanby.—The following were elected examiners under the Examining Board for the ensuing year:—Elementary Biology: Thomas William Shore and James P. Hill. Anatomy: Arthur Thompson, Frederick Gymer Parsons, and David Hepburn. Physiology: George Alfred Buckmaster and Herbert Eldon Roaf. Midwifery: George Frederick Darwall Smith, Cuthbert Lockyer, George Drummond Robinson, and Charles Hubert Roberts. Diploma in Public Health: Sir Frederick William Andrewes and Frederick Norton Kay Menzies. Tropical Medicine and Hygiene: H. B. G. Newham and G. Carmichael Low. Diploma in Ophthalmic Surgery: J. Herbert Parsons, H. Willoughby Lyle, and E. Treacher Collins. Diploma in Psychological Medicine: Sir Frederick Mott.—The following lecturers, professors, and demonstrators were elected for the ensuing year:—Hunterian Professors: Sir Arthur Keith, six lectures on the Comparative Osteology of Human Races; Mr. Harold Burrows, two lectures on the Results and Treatment of Gunshot Wounds of the Blood-vessels; Mr. A. G. Timbrell Fisher, one lecture on the Pathology of Chronic Arthritis with remarks on the Basal Principles of Treatment of Joint Diseases as indicated by Anatomical and Physiological Observations; Mr. C. A. Pannett, one lecture on Hydronephrosis; Mr. A. H. Todd, one lecture on Orthopædic Aspects of Rheumatoid Arthritis; Mr. K. Macfarlane Walker, one lecture on Enlargement of the Prostrate. Arris and Gale lecturers: Mr. V. Zachary Cope, one lecture on the Nerve-supply of the Parietal Peritoneum and Superperitoneal Tissues; Mr. F. W. Edridge-Green, one lecture on New Researches in Colour Vision; Prof. Swale Vincent, one lecture on a Critical Examination of Current Views on Internal Secretion. Erasmus Wilson Lecturer: Prof. S. G. Shattock. Arnott Demonstrator: Sir Arthur Keith. Thomas Vicary Lecturer: Sir Charles A. Ballance.—The Committee recommended that the Primary Fellowship Examinations should be held in June and December, 1922, and until further notice.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS, GLASGOW.—At the monthly meeting of the Faculty held on June 6th the following were admitted (after examination) as Fellows: Dr. John Hutcheson Fyfe, Dr. Archibald Monteath Laurie, Dr. Thomas Talmage Read, and Dr. James Douglas Wright.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The annual elections at the Royal College of Surgeons took place last week. The President and Vice-President, Mr. Edward Taylor and Sir W. I. de C. Wheeler, hold office without change. The vacancy in the post of honorary secretary left by the death of Sir Charles Cameron has been filled by the election of Sir Lambert Ormsby. There are two new members of Council, Mr. Louis A. Byrne and Mr. Seton Pringle.

CONFERENCE ON INFANT WELFARE.—The second English-speaking Conference on Infant Welfare will be held at the Central Hall, Westminster, London, S.W. (instead of as previously announced), on July 5th, 6th, and 7th, from 10 to 1 and from 2.30 to 4.30 each day. On Tuesday, July 5th, at 10 A.M., the President of the conference, Lord Astor, will deliver the inaugural address, followed by consideration, during the morning and afternoon sessions, of papers on Residential Provision for Mothers and Babies. Sir George Newman will take the chair at these sessions, and papers will be read by Dr. Janet Campbell, Miss E. Walker Finlay, Dr. C. J. Macalister, Mrs. Cyril Smithett, Miss M. E. Broadbent, Dr. H. B. Gladstone, and Miss J. Halford. On Wednesday, July 6th, Dr. Janet Lane-Claypon will preside at the morning, and Mr. Wilfred Buckley at the afternoon session. The subject for discussion will be The Supply of Milk: its Physiological and Economic Aspects, and papers will be read by Mr. Nathan Straus, Prof. Stenhouse Williams, Dr. E. W. Hope, Dr. Harold Waller, and Dr. S. G. Moore. From 5.30 to 6.30 P.M. a special medical session will be held, when a discussion on "Uniformity of Method and Practice in the Conduct of Infant Welfare Centres" will be introduced by Dr. Eric Pritchard. All members of the medical profession are invited to attend this session, and will be admitted free on presentation of visiting card. On Thursday, July 7th, Dr. G. F. Still will preside. A discussion on Inheritance and Environment as Factors in Racial Health will be held, and papers will be read by Dr. Helen MacMurchy, Dr. Frederick Hoffman, Dr. C. W. Saleeby, and Dr. Gordon Ley. From 5.30 to 6.30 P.M. a meeting of the General Council of the Association of Infant Welfare and Maternity Centres will be held. The subject for discussion will be "What are the Most Vital and Essential Forms of Child Welfare Work?" All interested are invited to attend, and will be admitted free. Evening lectures have been arranged as follows: July 5th, 7 to 8 P.M., The Ideal Maternity and Child Welfare Centre, by Mrs. H. B. Irving: 8 to 9 P.M., Common Infections in Mother and Child, by Dr. Eric Pritchard. July 6th, 7 to 8 P.M., The Accessory Factors in Infant Feeding; 8 to 9 P.M., The Syphilitic Mother and her Infant, by Dr. John Adams. July 7th, 7 to 8 P.M., The Psychology of the Mother and her Child, by Dr. Flora Shepherd; 8 to 9 P.M., The Tuberculous Mother and her Infant, by Dr. Geoffrey Marshall. A Child Welfare Exhibition will be open from July 5th to 9th, from 11 A.M. to 9 P.M., in the Central Hall, Westminster, where demonstrations on the care of the baby, including feeding, cookery, toilet, exercise, clothing, sleep, habits, &c., will be given. Child welfare doctors, dentists, and oculists will be in attendance daily to give free consultations and advice on the health of mothers and young children. The inclusive conference fee is £1 1s. per member, but tickets for various parts of the conference and for attendance without the right to printed matter issued in connexion therewith, as well as all further particulars, can be obtained from Miss Halford, Secretary, National Association for the Prevention of Infant Mortality, 4 and 5, Tavistock-square, London, W.C. 1.

Dr. William Brown, M.D., D.Sc., Reader in Psychology in the University of London (King's College), has been appointed Wilde Reader in Mental Philosophy in the University of Oxford.

ROYAL SANITARY INSTITUTE.—The inaugural address at the Congress to be held at Folkestone from June 20th to 25th, to which we referred last week, will be given at 5 P.M. on June 20th by Lord Radnor, and a popular lecture, "Vitamins and their Relation to Health," will be given by Prof. Edward Mellanby on June 23rd at 8 P.M. Among the subjects on which discussions are being arranged are: Control of the Developmental and Wasting Diseases; Overfeeding and Wasting in Children: Mentally and Physically Defective Children; Administration of Maternity and Child Welfare Work; Day Continuation Schools and the Teaching of Hygiene and Child Welfare; The Backward Class versus the Special School; Child Welfare Centres and Rickety School Entrants; Dental Clinic and Prevention of Physical Defects; Legislative Reforms needed in the Interest of Child Life; Egg Powders and Invalid Wines; The Relation of Hospitals to Preventive Medicine; The Hospital and the Primary Health Centre in relation to a Health Service; The Gloucestershire Scheme for the Extension of Medical Services; Costs and Results of various Public Health Activities; Tuberculosis; Diphtheria, Spread of Disease by Carriers; Poor-law Relief, its Effect on Public Health; Trained Nurses and Public Health Work; Preservation and Restoration of Breast Milk; Hygiene and Personal Efficiency; Health Teaching of Mother and Child; Common Sense Hygiene in the Home; Industrial Fatigue; Work of Research Board: Industrial Welfare; Miners' Nystagmus; Tuberculin Test in Cattle; Slaughtering of Animals intended for Human Food; Milk, and Supervision of Cowsheds: Meat Inspection and Slaughter-houses: Rats, Prevention and Destruction; Smoke Abatement; Housing and Town Planning; Rural Housing; Communal Hot Water and Heating; Hospital and Sanatoria Construction; Utilisation of Sewage Sludge; Refuse Salvage; Roads—Heavy Motor Traffic and District Roads: Disinfection and Disinfectants. Arrangements for excursions are being made, and a Health Exhibition will be held in the Drill Hall from June 20th to 29th. The officers at the Conferences to be held are as follows:—(1) Representatives of Sanitary Authorities: President: The Mayor of Folkestone; Recording Secretary: Dr. A. Wellesley Harris. (2) Medical Officers of Health; President: Dr. J. Wright Mason; Recording Secretary: Dr. Alfred Greenwood. (3) Engineers and Surveyors; President: Mr. H. Percy Boulnois; Recording Secretary: Mr. Edward Willis. (4) Veterinary Inspectors: President: Major-General Sir L. J. Blenkinsop; Recording Secretary: Mr. J. R. Hayhurst, M.R.C.V.S. (5) Sanitary Inspectors: President: Mr. G. M. Pettit; Recording Secretary: Mr. J. H. Clarke. (6) Health Visitors; President: Miss Gertrude Tuckwell; Recording Secretary: Miss L. M. O'Kell. (7) Rat Officers: President: Dr. Nathan Raw, M.P.; Recording Secretary: Mr. G. L. Moore. Congress tickets, at £1 11s. 6d. each, can be obtained from the hon. secretaries, Royal Sanitary Institute Congress, Town Clerk's Office, Folkestone. Ladies' tickets (not including copies of the Proceedings) 10s. 6d. each.

LONDON DERMATOLOGICAL SOCIETY.—The annual general meeting of this Society will be held at 4.30 P.M. on Tuesday, June 21st, at St. John's Hospital, 49, Leicester-square, London, W.C. At 5 P.M., the first annual address on the Progress of Dermatology will be given by Dr. T. M. Legge, H.M. Chief Medical Inspector of Factories on Occupational Dermatoses and the State, Lord Chesterfield presiding.

DONATIONS AND BEQUESTS.—The late Mr. Rutherford John Pye-Smith, Professor of Surgery at Sheffield University, who left estate of the gross value of £9596, bequeathed £1000 to Sheffield University for a Chair in Surgery; £100 to Sheffield Royal Hospital; and £50 each to Broompark Mission, Daisy-walk, Sheffield, the Edinburgh Medical Mission, and the Pye-Smith Scholarship Fund, Walthamstow Hall, Sevenoaks.—St. Thomas's Hospital has received £1000 from the trustees of Smiths Charities and £500 from Lloyds Bank.

INTERNATIONAL UNION AGAINST TUBERCULOSIS.—An International Conference will be held in London on July 26th, 27th, and 28th under the auspices of the National Association for the Prevention of Tuberculosis. The annual conference of the Association will be merged in the meeting. The International Union against Tuberculosis is the lineal continuation of the International Tuberculosis Conference which, up to 1913, assembled annually in one or other of the capitals of Europe or in America. The purpose of the International Union is to achieve an effective combination of the nations of the world against tuberculosis. Its President for the current year is Mr. Léon Bourgeois, President of the French Senate, who will be succeeded on the occasion of the impending Conference in London by Sir Robert Philip. The Conference is open to official delegates from countries within the League of Nations and from the United States of America, and from all authorities interested in the subject. It will be welcomed to London on behalf of the Government by Lord Curzon, and Sir Alfred Mond, the Minister of Health. Addresses will be given at the opening meeting by Mr. Léon Bourgeois and Colonel George Bushnell, United States Army Medical Corps. A discussion on the Modes of Diffusion of Tuberculosis throughout the Races of the World will be opened by Prof. A. Calmette, and the subject will be dealt with under the following headings: (*a*) Frequency of tuberculosis among civilised people: its rarity among savage or nomadic races; (*b*) number of persons infected at different ages of life in crowded centres and in rural areas; (*c*) sources of tuberculous infection—expectoration, discharging tuberculous lesions, milk; (*d*) contagiousness of latent lesions: discharge of bacilli by natural excretory channels (intestine, kidney, mammary gland); (*e*) dissemination of tuberculous infection by apparently healthy T.B. carriers: preventive measures against the spread of infection. A discussion on the Rôle of the Medical Profession in the Prevention of Tuberculosis will be opened by Sir Humphry Rolleston, followed by Sir George Newman. The Lord Mayor of London will give a reception in honour of the Union at the Mansion House on Tuesday, July 26th. Other social functions and visits to institutions of special interest are being arranged. A fee of one guinea per representative will be charged, to include copy of transactions.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—The annual provincial meeting of this Society was held on June 11th, at the Institute, Welwyn Garden City, Herts, Dr. F. E. Fremantle, M.P., the President, being in the chair. There was a large attendance of members, who first motored from London to Hatfield House, which was visited by permission of the Marquis of Salisbury. The members then proceeded to Welwyn Garden City, where they were entertained at luncheon by the President of the Society. After luncheon a short address was given by Sir Theodore G. Chambers, chairman of Welwyn Garden City, on the Garden City project. He referred to the interest taken in the scheme by Dr. Fremantle, who is one of the directors of the company and has devoted a great deal of time to it. Sir Theodore Chambers emphasised the distinction between the proposed garden city on the one hand and garden suburbs or villages on the other. The fundamental idea of the scheme was the development, in accordance with a carefully devised plan, of a complete self-contained town, comprising within itself its own industries and having a full civic life. It was too much mixed up in the public mind with suburban development, to which it was the antithesis. Suburban development of large towns involved an excessive amount of transport and other sources of wear-and-tear, while the idea of the satellite town or garden city was a redisposition of population in rural surroundings. There was at present a scandalous amount of overcrowding in towns, and the motive of the new development was to move into the country whole communities, rich and poor, together with their working conditions. Sir Theodore Chambers referred to the enormous difficulties inherent in any attempt to remedy the grave housing and allied evils in existing towns—evils due largely to vested interests. In the Welwyn Garden City development would not be hampered by encumbrances of this kind, because (1) the Garden City Company owned in fee simple the whole of the land, comprising about four square miles (about the size of Luton or Bedford), and (2) the dividend on the capital was definitely limited, so that the whole of the excess profit could be used for development and improvement. The land was acquired 15 months ago, and there were now 150 houses completed. Already there were civic meetings, church services, a restaurant, a club, and facilities for tennis, cricket, croquet, &c. The Herts County Council, whose clerk, Sir Charles Longmore, had been a strong supporter of the garden city idea, both here and at Letchworth, had given great assistance by altering the local boundaries so that the Welwyn City now consisted of a single civil parish in one rural district and one Poor-law union. There would be a liaison between the parish council and the city company, the former electing some of the members of the latter. This would give all the citizens a share in the management of the city. Already sites had been taken for factories which would employ some thousands of hands. The city was situated at the junction of railway lines in four directions, and the Great Northern Railway has decided to constitute it a great railway centre, and to give excellent facilities for sidings, &c. The site was from 300 to 400 feet above the sea-level, and the city would have its own water-supply and sewage disposal. There was no large town within eight or nine miles, so that it would be centrally situated in a large tract of country. In conclusion, Sir Theodore Chambers claimed that the idea of the satellite town offered a direction in which true progress might be made towards the elimination of the evils due to the agglomeration of population in large towns, the effects of which, he said, were well known to his hearers. Prof. H. R. Kenwood (M.O.H., Bedfordshire and Stoke Newington) proposed a vote of thanks to the President for his entertainment, which was passed with acclamation. He referred with regret to the fact that Dr. Fremantle's year of office was drawing to a close and congratulated him on its success. The President briefly replied, and called attention to the pioneer work which had been done by Mr. Ebenezer Howard in the inception and development of the garden city idea and the acquisition of the Welwyn site; and also to the great services rendered by Sir Theodore Chambers. After the business meeting, at which were elected 17 new Members and 115 new Associates, the party proceeded to Bedwell Park, where they were entertained to tea by Mrs. Fremantle.

NATIONAL COUNCIL FOR COMBATING VENEREAL DISEASES.—The sixth annual meeting of the Council will be held in the Morley Hall, Y.W.C.A., 25 and 26, George-street, Hanover-square, London, W. 1, on Tuesday, June 28th, at 4.15 P.M., Lord Gorell in the chair.

Mr. George E. Vincent, Ph.D., LL.D., director of the Rockefeller Foundation, and two of its members, were entertained to dinner by the Government at the Carlton Hotel on June 13th. Mr. Churchill, who presided, welcomed the guests on behalf of the Colonial Office which, he said, would do everything possible to assist the work of the Foundation. The study of tropical diseases was a work of mercy and of urgency. Therein lay a line of defence in which all nations could join hands.

COLLEGE OF NURSING, BIRMINGHAM.—For the ten days ending June 11th a considerable undertaking on behalf of the trained nurses of Birmingham and the three counties adjoining, in the form of a scenic fair in Bingley Hall, met with considerable success. The aim of the promoters was to obtain a sum of £10,000 and £21,000 has so far been received. This sum will be allocated as follows: (1) 80 per cent. to found a club for nurses and to endow scholarships for the nurses of Birmingham and the three counties; (2) 10 per cent. to the College of Nursing; (3) 10 per cent. to the Nation's Fund for Nursing.

GENERAL HOSPITAL, BIRMINGHAM.—On June 10th a presentation was made to Dr. Thomas Wilson on his retirement from the medical staff of the hospital after 28 years' service, of which 10 had been spent as assistant obstetric officer, and 18 as hon. obstetric officer. The Bishop of Birmingham presided over a large meeting of subscribers. At Dr. Wilson's request the sum of money collected is to be devoted towards a fund for the purchase of apparatus for medical research and teaching under the guidance of the medical committee. Mrs. Wilson was presented with a valuable necklace in appreciation of her services to the hospital on the Samaritan Committee and in other ways. Dr. Wilson is recommended to the governors for election to the post of consulting obstetric officer.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, JUNE 8TH.

Medical Services in the Navy.

THE House considered on Report the Navy Estimates for 1921-22.

On a vote of £720,500 for Medical Services, including the cost of medical establishments at home and abroad,

Commander BELLAIRS said he understood that the representatives of the army and navy were meeting together under the presidency of the Lord President of the Council. He wanted, if possible, the Admiralty to meet the War Office and see whether they could not effect economy by amalgamating the medical arrangements of the army and the navy. To give a concrete example, he found in the case of Hong-Kong that the military hospital there had accommodation for 166 patients, and the maximum number of patients accommodated was 64, showing a surplus accommodation of 102. The minimum number of patients accommodated was 20, or a surplus of 146. Similar figures were shown in connexion with the naval hospital, which had accommodation for 135, a maximum accommodated of 97, and a minimum of 55. The Yokohama Naval Hospital, also on that station, was closed all through the war and right up to 1920, and it had now been reopened. He urged that a great deal might be saved if there was a thoroughgoing inquiry, with the object of preventing overlapping between the two services. There was no difference between the body of a soldier and the body of a seaman so far as medicine was concerned. The House would be shocked if it were to investigate the number of medical men, say, on the China station, and the number of men for whom they had to cater. They had also convalescent barracks at Hong-Kong for the military, and if all these arrangements were considered together he thought they could bring about considerable economies. He suggested that a general stocktaking should be made in regard to the medical arrangements, because he did not believe that the medical service was doing its best in both services to cut down expenditure.

Sir G. COLLINS said if the army and the navy could combine on hospital accommodation it would, he thought, be of advantage to the patients, and, incidentally, to the advantage of the taxpayer. He should like to ask why the Admiralty had refused to adopt the recommendations of the Select Committee on National Expenditure, and present their accounts to the House of Commons in the modern method. The War Office had accepted that recommendation, and a study of the War Office Estimates revealed the cost of patients in every hospital under the War Office, whereas from a study of the Navy Estimates it was quite impossible to find out if these medical establishments were efficiently managed.

Mr. AMERY (Parliamentary Secretary to the Admiralty) said that the suggestion of Commander Bellairs that they might secure economy by amalgamating the naval and military hospital work at certain stations abroad was one that naturally at first sight would appeal to the House, and he would certainly promise to look into it, but, at the same time, Members would realise that the conditions of naval and military service and discipline, and many of the aspects of their organisation, were so different as to make it not altogether an easy thing to carry out that amalgamation, though he could imagine that there might be some stations where a military hospital could provide for a certain limited number of naval patients, and vice versa. With regard to the case of Yokohama, he had not only asked for a close investigation as to the cost of that establishment, but also as to the possibility of getting some military establishment elsewhere to deal with patients who at present went to Yokohama. As regarded the point raised by Sir G. Collins, the Admiralty were still considering the whole of their system of accounting. A committee was sitting on the subject, and he hoped that their deliberations would lead to a considerable simplification of their financial methods and accounts.

The vote was agreed to.

Medical Board's Decision Set Aside.

Viscountess ASTOR asked the Minister of Pensions whether he was aware that James Stanley Fairbank, late officers' steward, second class, R.N., who was demobilised on Feb. 27th 1919, after having suffered severely from sleeplessness and nervous debility, and who subsequently developed neurasthenia, applied for a disability pension in September, 1920, which was recommended by a medical board in December, 1920, but quashed by the regional committee without any further medical examination; why was the opinion of the local medical board set aside by a body which had made no such personal investigation; and would he undertake that the case should be reconsidered on the basis of the original medical board.—Mr. MACPHERSON replied: Although the medical board which examined this man when he made a claim to pension more than one and a half years after discharge expressed the opinion that his disability was due to service, the Ministry were unable to accept that view, and pension was accordingly refused. The case has now been heard by the independent Pensions Appeal Tribunal, which has confirmed the finding of the Ministry; and, as decisions of the tribunal are final, I regret that the case cannot be reopened.

Welsh Board of Health.

Mr. ALFRED T. DAVIES asked the Minister of Health whether, in view of the fact that under the National Health Insurance one of the Insurance Commissioners for Wales was a woman, he intended to appoint a woman to the Welsh Board of Health.—Sir A. MOND replied: If a vacancy occurs I shall be prepared to consider the appointment of a woman to the Welsh Board of Health. At present the Board, which consists of salaried administrative officers, is sufficient in number for the work to be done.

THURSDAY, JUNE 9TH.

Grants to University Colleges.

Mr. ERNEST GARDNER asked the President of the Board of Education whether the University Grants Committee was precluded from allocating financial assistance to university colleges where support was not forthcoming from local sources or whether such assistance is to be proportioned to the amount of the support from local sources without regard to the proved educational value of the work of the institution; its increase, if any, in numbers; its consequential legitimate requirements, and the strength or weakness of the financial resources available from which local support might be afforded.—Sir R. HORNE (Chancellor of the Exchequer) replied: Local support is regarded as the primary factor in estimating the claims of the different institutions for additional grant aid, but the University Grants Committee are not precluded from making allowance for the other considerations referred to by the honourable Member in their grant recommendations.

Insurance Benefit in Hospital.

Mr. ROBERT YOUNG asked the Minister of Pensions whether a discharged soldier temporarily unfit for work, and receiving while in hospital 100 per cent. allowance, was entitled to any benefit under the National Insurance Acts while in hospital.—Mr. PARKER (for Sir Alfred Mond) replied: Sickness or disablement benefit is not payable to an insured person while he is an inmate of a hospital or similar institution, but the whole or part of the benefit is paid to his dependents, if any, or may be applied towards meeting any expenses for which the insured person may be liable otherwise than to the hospital, or, with his consent, may be paid to the hospital if it is not maintained out of public funds. So far as the money is not used in any of these ways, it becomes payable to the insured person on leaving the hospital. In the special case where the insured person is a discharged soldier in receipt of 100 per cent. allowance, the rate of sickness (or disablement) benefit is reduced by 7*s.* 6*d.* a week unless he has been employed for 26 (or 104) weeks since discharge from the army.

Closed Wards in the London Hospital.

Mr. CHARLES EDWARDS asked the Minister of Health whether his attention had been called to the closing of certain wards and curtailment of the out-patient department of the London Hospital; and whether he proposes to take any steps to provide adequate facilities for medical treatment for the people of East London.—Mr. PARKER (Lord of the Treasury) replied: The answer to the first part of the question is in the affirmative. As regards the second part my right honourable friend can make no statement until the Government have had an opportunity of considering the Report of Lord Cave's Committee which is now before them, but he would point out that there is accommodation for emergency cases available in the Whitechapel and other infirmaries in East London.

Training Grants for Nurses.

Mr. HURD asked the Minister of Labour whether any and, if so, how many of the women under training as nurses had been rejected after trial as being unsuited to the nursing profession; and whether, in any of these cases, his Ministry had refused to accept this decision and was continuing the payment of training grants.—Dr. MACNAMARA replied: No women have been placed in training for the nursing profession by the Ministry of Labour. A number of women, however, are being trained to become qualified midwives. It is the practice to discontinue training immediately if the trainee is reported by the responsible authorities to be unsuitable. If my honourable friend has any particular case in mind, perhaps he would give me details, in order that I may have inquiry made.

Disabled Men in General Hospitals.

Captain Viscount CURZON asked the Minister of Pensions whether the Ministry could occupy some of the vacant wards in hospitals for the accommodation of disabled men, and so release hut accommodation, such as Ruskin Park, and benefit the hospitals.—Mr. MACPHERSON replied: This hospital was transferred to the Ministry of Pensions by the War Office Authorities. It has been fitted with special orthopædic out-patient arrangements, and special sections for treatment of disabled officers and nurses. It has been found to provide the most convenient and, incidentally, the most economical centre for treating the large body of the disabled in that district.

Bellahouston Hospital.

Mr. NEIL MACLEAN asked the Minister of Pensions whether the inquiry into the administration of Bellahouston hospital was a private one; and whether, in view of the general interest in the matter, he would order the proceedings to be conducted in public.—Mr. MACPHERSON replied: The answer to the first part of the question is in the affirmative, and to the second part in the negative.

FRIDAY, JUNE 10TH.

Coroners (Remuneration) Bill.

The House considered the Coroners (Remuneration) Bill as amended in Standing Committee.

On Clause 1, which deals with the increase of coroners' remuneration, Sir JOHN BAIRD (Under Secretary for Home Affairs) moved to omit Subsection 1. He explained that the amendment was necessary to secure that a revision and not merely an increase of the salaries of coroners took place. Should a decrease be found necessary, it could be made if this amendment was agreed to.—The amendment was carried.

Sir F. BANBURY moved to omit Subsection 2, which defines the duties of the authorities charged with the payment of coroners' salaries. He said he wished to draw the attention of the House to the fact that this Bill had been moved by an honourable Member who was a coroner himself, and would receive benefit from the Bill. Whether or not this was within the strict letter of the Orders of the House he contended it was utterly wrong.—The DEPUTY SPEAKER said this amendment would practically destroy the Bill.

Sir F. BANBURY then moved to substitute the word "may" for "shall" in the subsection.

Sir T. BRAMSDON said he had asked Mr. Speaker about the matter, and he had told him that he was perfectly in order in bringing in the Bill and, according to Erskine May, a Member who represented a class was quite in order in bringing in a Bill and voting upon it. He brought in the measure as Past-President of the Coroners' Society for England and Wales, and therefore he did represent the class of coroners.—Sir F. BANBURY said the honourable Member was not returned to that House by the coroners, but by the electors of his constituency. Surely the people to judge whether coroners should receive increased remuneration were the local authorities and the ratepayers. They all knew how heavy was the burden of the rates, and he asked the House to support him in killing this Bill, which had no business to have been brought in.—Mr. BARTLEY DENNISS said he hoped the Government did not support this Bill. He was astonished that it should be in order for a private Member to bring in a Bill which compelled local authorities to raise the fees of coroners by not less than 50 per cent. The House would lose its self-respect if it passed such a measure. No terms were too strong to condemn the Bill.

Sir T. BRAMSDON said that he assured the House that there was no necessity for heat. The proposals were very just. Coroners for counties were paid by salary which was arranged according to the quinquennial valuation under the Act of 1860. Coroners for boroughs were paid by fees, and being a coroner himself he might say that they were the worst paid body of public servants in the whole Kingdom. Coroners for boroughs were paid £1 6*s*. 8*d*. for every inquest which they held. The last increase in the fees took place in 1887. If a coroner did not hold an inquest he was entitled to no fee at all. They held a great number of inquiries and got nothing out of them. Moreover, if an inquest lasted three or four days the coroner only got £1 6*s* 8*d*. Coroners and High Court judges were the only officials in the country who had not had an increase in their salary. The Bill was not a permanent, but a temporary one. The view taken by the Home Office was that these salaries should be revised.—Mr. S. ROBERTS said coroners were not overpaid at present, and they had not only to pay out of their fees a very much increased remuneration to their staff, but they had got to pay the cost of stationery and postage and increased rates on their offices, as well as increased cost of petrol or hire of conveyances. He supported the Bill, but he must vote for the amendment to leave it to the local authorities to decide, as he objected to Parliament forcing local authorities to make payments.

Sir J. BAIRD said although coroners were paid by the local authorities they were judicial officials, and to that extent they were connected with the Home Office. They had come to the Department and pointed out that there had been no alteration in their fees since 1887. He did not think that it would be easy to substantiate the view that a payment which was adequate in 1887 was adequate for similar services to-day. Yet the fees could not be increased without the sanction of that House. Though the Government were not able, in view of the Parliamentary situation and the business to be got through, to bring in a Bill dealing with their case, it appeared to them that the coroners had a claim for consideration. If this amendment were not carried he would later move one to provide that any increase in salary which might have been granted should be taken into account in the revision under the Bill. The Government had made it clear that if a private Bill was brought in they would favourably consider it, provided that it was amended in such a way as to meet what they considered necessary conditions. He hoped the House would hesitate before refusing a reasonable opportunity for having these salaries revised.—On a division Sir F. BANBURY'S amendment to make the Bill permissive was carried by 74 votes to 49.

On the motion of Sir F. BANBURY it was agreed to leave out in Subsection 2 the words: "and if the authority and the coroner fail to agree as to the amount at which the salary or fees should be fixed the Secretary of State shall, on the application of the authority or the coroner, determine the amount, having regard to the increase and other circumstances aforesaid."

Mr. BARTLEY DENNISS moved to leave out from Subsection 2 the words: "Provided that, as respects fees, the amount thereof shall in every case be revised so as to be increased by not less than 50 per centum." The amendment was agreed to.

On the motion for the third reading of the Bill,

Mr. G. BARKER said he agreed that the principle of the Bill was in accordance with equity and justice, but if the House was to legislate it should do so righteously and equitably for all the people of the country. That which was proposed to be given to the coroners was to be taken away from all the workers in this country. The Bill was a piece of downright class legislation.

The Bill was read a third time and passed.

Sick Pay and Light Work.

Mr. THOMAS DAVIES asked the Minister of Health under what Act of Parliament the Ministry of Health had altered the words of the National Health Insurance Act, incapable of work to mean incapable of heavy work, which was the only interpretation that could be given to Model Rule 12 (4) (e) of Model Rules, a 1919 edition, which interpreted incapable of work to mean that a member in receipt of sick pay might do light work; and what was the Ministry's definition of light work.—Sir A. MOND replied: The rule referred to by the honourable Member does not modify in any way the statutory requirement that in order to be qualified for sickness or disablement benefit an insured person must be incapable of work. Under Section 14 (2) of the National Insurance Act, 1911, every approved society is required to have a rule as to the behaviour of members while incapable of work and in receipt of sickness or disablement benefit. The rule in question, which was drawn up with the concurrence of the advisory committee composed of representatives of approved societies of all types, merely sets out the restrictions which a society should impose on the activities of a member whom they have already decided to be incapable of work. The Ministry does not lay down any definition of light work as it rests with each society to interpret its own rules in applying them to any particular case which may arise.

MONDAY, JUNE 13TH.

Dentists Bill.

The House considered the Dentists Bill on Report.

Colonel WEDGWOOD moved an amendment to Subsection 3 of Clause 1, excluding from the provisions of the Bill the extraction of teeth without fee or payment. Frequently in domestic life, he said, the mother of a family had to extract a loose tooth from a child's mouth. He wanted it made perfectly clear that a mere domestic extraction of that kind should not be treated as a crime.

Sir A. MOND said that he made it clear in Committee that they took out the words "without fee or reward" because they wished to prevent unqualified people starting practice by undertaking to extract teeth without fee or reward, on the understanding that they would be able to sell artificial teeth to those people, thus by some camouflage defeating the whole object of the Bill, which was to prevent unqualified people tampering with the teeth of the nation. Something in that direction was long overdue. A mother taking out the tooth of her child could not be held to be practising

dentistry, either directly or by implication.—The amendment was withdrawn.

Colonel WEDGWOOD moved the adjournment of the debate.—Lieut.-Commander KENWORTHY seconded the motion. He was not opposed to the Bill, but he had received many communications from dentists in his constituency asking for amendments, not wrecking amendments. Owing to the way in which the Bill had been brought in he had not had time to put them on the paper.—Sir A. MOND resisted the motion to adjourn the debate. Long negotiations had taken place between all the parties affected, and practically it was agreed that after the Bill passed through Committee the Report stage should be treated as agreed.—Colonel WEDGWOOD: Agreed by whom?—Sir A. MOND: By representatives of the registered and unregistered dentists.—Colonel WEDGWOOD: What about the public?—Sir A. MOND: The Minister represents the public, and it is in the interests of the public that the Bill should be passed.—Colonel WEDGWOOD said the Report of the Departmental Committee included a great deal more than the putting of the dentists in the same category as the doctors. It included also a free dental service. It also included some form of scholarship which would enable children of the working class to become practitioners. All that had been dropped. Dentistry had been made a close corporation, confined, like medicine, to the children of the middle and upper classes, and ruling out those who were dental mechanics.—Mr. LAWSON asked what guarantee the public had got against monopoly prices for dentistry.—The motion to adjourn the debate was negatived.

On Clause 3, which deals with the right of certain persons to be admitted to the Register, Colonel WEDGWOOD moved an amendment to substitute for the words "prescribed examination," "a modified examination." His object, he said, was to ensure that dental mechanics should not be called upon to pass a very stiff examination such as would be necessary for future aspirants.—Sir A. MOND resisted the amendment and urged that the word "modified" meant nothing.—The amendment was negatived.

The Report stage of the Bill was completed.

On the motion for the third reading of the Bill, Colonel WEDGWOOD moved the rejection of the measure.—Mr. MYERS seconded.—Major MOLSON advocated the passing of the Bill in the interests of the public and not in the interests of any branch of the profession. As to the question of a monopoly, he thought Colonel Wedgwood seemed to forget that they were going to double the number of qualified dentists in the country, and if they increased the supply surely that was the best way of reducing the price. The quality would improve.

The Bill was read a third time and passed.

TUESDAY, JUNE 14TH.

Financial Position of the Hospitals.

Colonel MILDMAY asked the Minister of Health whether he could find it possible to take steps which would result in immediate action based on the recommendations of Lord Cave's Report, with reference to the financial position of hospitals.—Sir ALFRED MOND replied: The matter is now before the Cabinet, and I hope to make an announcement on the subject in the course of the next few days.

Drunkenness Statistics.

Sir J. D. REES asked the Under Secretary of State for the Home Department, as Chairman of the Central Control Board (Liquor Traffic), the number of convictions for drunkenness in the scheduled areas of England and Wales during the past quarter of the current year; and the decrease on the figures for the corresponding quarter of 1920.—Sir J. BAIRD replied: The returns of the Central Control Board are compiled weekly. The most accurate information therefore which I can supply to my hon. friend is contained in the returns for the first complete 13 weeks of the year. They are as follows: 1920, 23,993; 1921, 19,854—decrease in 1921 as compared with 1920, 4139.

The Services.

OFFICERS' ALTERNATIVE PENSIONS.

THE Ministry of Pensions announce that officers and nurses disabled by Service in the Great War who intend to claim alternative retired pay or pension, based on pre-war earnings and present earning capacity, must make application before July 2nd, 1921, or before a year has elapsed since the first award of disability, retired pay, or pension, whichever is the later date. Applications for alternative pensions by widows of officers whose deaths were due to service in the Great War must also be made before July 2nd, 1921, or within a year of the date of first award of the flat-rate pension. A widow who may not be eligible at present owing to the receipt of allowances for children, but who may become eligible when these allowances cease must make application before July 2nd, 1921, in order to establish her future claim. A disabled officer is not eligible for alternative retired pay if his pre-war earnings did not exceed £132 a year (rather less for navy warrant officers), nor is a disabled nurse eligible for alternative pension if her pre-war earnings did not exceed £95 a year. In the case of officers' widows there is no fixed limit. As the substitution of alternative retired pay or pension for the ordinary flat-rate pension represents in some cases a substantial addition to the amount of the pension, disabled officers and nurses, and officers' widows who have not yet made application, should ascertain without loss of time whether they are entitled to the benefits of the alternative system. Applications and inquiries should be addressed to the Officers' Branch, Ministry of Pensions, Cromwell House Annexe, Millbank, London, S.W.1.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Comdr. J. H. Pead has been placed on the retired list with rank of Surg. Capt.

ROYAL ARMY MEDICAL CORPS.

The undermentioned temp. Capts. to be temp. Majs. whilst specially empld: H. St. A. Agate and A. G. Higgins.

The undermentioned relinquish their commns.:—Temp. Maj. J. F. O'Malley (and retains the rank of Maj.). Temp. Capts. (and retain the rank of Capt.): R. J. Snider and R. A. Shekleton.

ARMY DENTAL CORPS.

The undermentioned Dental Surgs. to be Majs: Temp. Maj. F. W. Shilton, from Spec. List; Flight Lt. (actg. Squad. Leader) C. L. Colbran, from R.A.F.

Flight Lt. D. Blair, Dental Surg., from R.A.F., to be Capt.

The undermentioned temp. Capts. to be Capts.: R. M. King, from Gen. List.

Dental Surgs. from Gen. List: D. Clewer, A. E. Webb, R. J. Condie, H. J. Procter, and H. L. McCallum.

Dental Surgs. from Spec. List: J. V. M. Byrne, F. H. W. Beer, A. T. Madin, and W. R. Wotton.

Lt. T. D. Corke, from Midd'x R., to be Lt.

The undermentioned temp. Capts. to be Lts. (with the temp. rank of Capt., but without the pay or allowances of that rank): J. Baillie and M. J. O'Reilly, Dental Surgs., from Gen. List.

Dental Surgs., from Spec. List: H. E. Flavelle, H. J. Higgins, and A. B. H. Cole.

TERRITORIAL FORCE.

Maj. W. Bryce is granted the rank of Lt.-Col., with permission to wear the prescribed uniform.

Capts. G. T. Willan and C. Corfield to be Majs.

Capt. E. S. Stork, from T.F. Res., to be Capt.

Capt. D. Stewart (late R.A.M.C., S.R.) to be Capt.

A. G. Williams (late R.N.V.R.) to be Capt.

D. M. Lindsay to be Lt.

DEFENCE FORCE.

C. I. Ellis to be temp. Col.

H. G. L. Allford to be temp. Capt.

2nd (Home Counties) Fd. Amb. (D.F.).—To be temp. Maj.: R. A. Freeman.

1st (W. Lancs.) Fd. Amb. (D.F.).—R. R. Thompson (Capt. R.A.M.C.) is granted the rank of temp. Maj.

1st (S. Midland) Fd. Amb. (D.F.).—To be temp. Capt.: J. H. Sheldon

1st (Highland) Fd. Amb. (D.F.).—To be temp. Maj.: F. M. Rorie.

1st (Welsh) Fd. Amb. (D.F.).—To be temp. Maj.: R. A. Beaver.

53rd Divl. San. Sect. (D.F.).—To be temp. Capt.: P. W. Kent.

INDIAN MEDICAL SERVICE.

The following relinquish their commissions:—Temp. Capts. Jitendra Mohan Ghosh (granted the rank of Capt.), Henry Richard Rishworth (granted the rank of Capt.), Chandragiri Rangabhashyam Naidu, Vasant Rajaram Masurekar, Kedar Nath Goyal, Teja Singh Uberoi, Justinian Anthony daCosta, Muqatlal Damodardas Munim, Ardeshir Dadabhoy Shroff, Ram Singh Sharma, and Lieut. George Fredrick Andeen.

Temp. Capt. Bantwal Shankar Rau is granted the rank of Capt. on relinquishing his temporary commission.

Mr. F. E. De B. Pim, L.R.C.P., L.R.C.S. Irel., has been appointed a Knight of Grace, and Mr. R. D. Thomas, L.R.C.P., L.R.C.S. Edin., an Esquire, of the Order of St. John of Jerusalem in England.

Appointments

CHISHOLM, A. E., M.B., F.R.C.S. Ed., has been appointed Obstetric Physician and Gynæcologist at the Royal Infirmary, Dundee.

FERNANDO, H. M., M.D., B.Sc. Lond., a member of the Executive Council of the Island of Ceylon, and an Unofficial Member of the Legislative Council of that Island.

MCARTHUR, J., L.R.C.P. & S. Edin., Medical Officer of Health to the Conisborough Urban District Council.

MATTHEWS, E. W., M.B., B.S. Lond., D.P.H., Medical Officer of Health for Kingston-on-Thames.

PICKEN, R., M.B., C.M. Glasg., Medical Officer of Health for Cardiff.

RAINY, H., M.D. Edin., Medical Adviser to the Prison Commissioners for Scotland.

Certifying Surgeons under the Factory and Workshop Acts: GIBBON, J. G., M.D. Dub. (Mullingar); CROWLEY, T., L.R.C.P. & S., Irel. (Wath-on-Dearne); SAVERY, W. M., L.R.C.P. Lond., M.R.C.S. (Evesham).

Vacancies.

For further information refer to the advertisement columns.

Aberdeen Royal Asylum.—Temp. Jun. Asst. P. £250.
Ashton-under-Lyne District Infirmary.—Asst. H.S. £200.
Bedford County Hospital.—H.S. £200. Asst. H.S. £150.
Birmingham General Hospital.—Asst. Obst. Officer.
Birmingham and Midland Ear and Throat Hospital.—H.S. £200.
Birmingham, Queen's Hospital.—Obstet and Ophth. H.S. Cas. H.S. £90 each.
Birmingham, Yardley-road Sanatorium and Municipal Anti-Tuberculosis Centre.—Asst. M.O. £500.
Bootle Borough Hospital.—Sen. H.S. £200. Jun. H.S. £150. Hon. Phys. Hon. Ophth. Surg.
Bradford Royal Infirmary.—H.S. £200.
Bristol Education Committee.—Asst. Sch. Med. Officer. £600.
Bristol Eye Hospital.—H.S. £150.
Burnley County Borough.—Tubere. O. and Director of Municipal Laboratory. £650.
Burnley, Victoria Hospital.—H.S. £200.
Cambridge, Addenbrooke's Hospital.—H.S. £130.
Cancer Hospital, Fulham-road, S.W.—H.S. £150.
Charing Cross Hospital, Agar street W.C.—Phys. in charge of Children's Dept. Med. Reg. £150.
Chester, City of.—Asst. M.O.H. £500.
Colchester, Essex County Hospital.—H.S. £200.
Derby, Derbyshire Royal Infirmary.—H.S. H.P. Each £200.
Doncaster Royal Infirmary and Dispensary.—Sen. H.S. £225. Jun. H.S. £200.
Eday, Orkney.—M.O. £9 per week.
Elizabeth Garrett Anderson Hospital, Euston-road.—Female Asst. Radiologist. £50. Female Asst. Pathologist. £275.
Enfield Education Committee.—Sch. M.O. £500.
Gloucester, Gloucestershire Royal Infirmary and Eye Institution.—Asst. H.S. £150.
Leeds Public Dispensary.—Sen. Res. M.O. £200.
Liverpool Royal Southern Hospital.—Two H.P.'s and three H.S.'s. Each £100.
Liverpool, West Derby Union, Mill-road Infirmary and Alder Hey Hospital.—Asst. Res. M.O's. £400.
London County Council.—Asst. M.O. for Mental Hosp. Service. £300.
London (R.F.H.) School of Medicine for Women.—Part-time Demonstrators in Department of Anatomy.
London Temperance Hospital, Hampstead-road, N.W.—Asst. Res. M.O. £120. Surg. Registrar. 10 guineas.
London University.—Professor of Medicine and Director of the Medical Clinic at St. Mary's Hospital Medical School. £2,000.
Lucknow University, India.—Prof. of Pathology. Rs.1200 a month. Prof. of Physiology. Rs.1100 a month.
Manchester, Ancoats Hospital.—Res. Surg. O. £250.
Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—H.S.
Manchester Royal Infirmary, Central Branch, Roby-street.—Female Res. M.O. £200.
Margate, Royal Sea-Bathing Hospital for Surgical Tuberculosis.—Female Surg. £200.
Middlesbrough Education Committee.—Female Asst. School M.O. £500.
Newcastle-upon-Tyne Education Committee.—Dental Surg. £450
Newport, Mon., Royal Gwent Hospital.—H.S. £200.
Nottingham, City of.—Asst. Pathologist. £500.
Oswestry, Shropshire Orthopædic Hospital.—H.S. £250.
Poplar Hospital for Accidents, Poplar, E.—Asst. Res. S. £150.
Preston and County of Lancaster Royal Infirmary.—Sen. H.S. £250.
Royal Free Hospital, Grays Inn-road, W.C.—Two H.P.'s. £50.
Royal Naval Medical Service.—Surg.-Lieuts. 26*s.* 6*d.* per diem.
St. George's Hospital, S.W.—Two Res. H.S.'s, Res. Obstet. O. Each £50. Cas. O. £200.
St. Helens Hospital, Lancashire.—Res. M.O. £250.
Saint Pancras Dispensary, Oakley-square, N.W.—Res. M.O. £225.
Seamen's Hospital, Albert Dock, Connaught-road, E.—H.S. £150.
Southampton Free Eye Hospital.—H.S. £200.
Southampton, Royal South Hants and Southampton Hospital.—Jun. H.S. £150.
South London Hospital for Women, South Side, Clapham Common, S.W.—Asst. Pathologist. £150. Temp. Anæsth.
Stamford, Rutland and General Infirmary.—H.S. £250.
Sunderland Royal Infirmary.—H.P. £200.
Sydney University, New South Wales, Australia.—Lecturer in Veterinary Anatomy and Surgery (including Obstetrics). £500.
Torquay, Torbay Hospital.—H.S. £200.
Union of South Africa Government.—Asst. P.'s in Mental Hospital Service. £100.
West London Hospital, Hammersmith-road, W.—Two H.P.'s. H.S. Each £50. P. Neurologist.
Wigan Infirmary.—Hon. Asst. Surg.
Worcester County and City Mental Hospital, Powick.—Sen. Asst. M.O. £500.

Births, Marriages, and Deaths.

BIRTHS.

JAMIESON.—On June 6th, at Stalheim, Mulgrave-road, Sutton, Surrey, the wife of R. Hillhouse Jamieson, M.D., F.R.C.S. Ed., of a daughter.

LANGFORD-JONES.—On May 31st, at a nursing home, Croydon, the wife of R. P. Langford-Jones, M.B., B.S. Lond., of a son.

MCCARTER.—On June 2nd, at Orsett-road, Grays, Essex, the wife of Dr. W. H. R. McCarter, of a son.

MARSH.—On June 11th, at Torbay House, Stow Park-avenue, Newport, Mon., the wife of O. de B. Marsh, O.B.E., M.B., B.Ch. Cantab., of a son.

SODEN.—On June 9th, at Tudor House, Winchcombe, Glos., to the wife of W. Scovil Soden, M.B., B.Ch. — a son.

MARRIAGES.

CASSIDY—EVAN-THOMAS.—On June 4th, at St. James's Church, Piccadilly, Major Colin Cassidy, M.C., R.A.M.C., to Cara Averil, second daughter of Mr. and Mrs. Edmund Evan-Thomas, of Bramham-gardens, S.W., and Neath, Glamorgan.

MARR—PETTY.—On June 8th, at St. Marylebone Parish Church, Lieut.-Colonel Colin Forbes Marr, I.M.S., to Alethea Seymour Martin, eldest daughter of the late Rev. H. M. Petty, M.A., Milton Abbot, Devonshire, and of Mrs. Petty, Farnham.

TRUMPER—TIRARD.—On June 11th, at All Saints', Margaret-street, W., William Arthur Trumper, M.R.C.S., L.R.C.P., of Ivybridge, South Devon, to Marigold Tirard, elder daughter of Sir Nestor and Lady Tirard, of 74, Harley-street, W.

DEATHS.

FLOOD.—On June 5th, at Morehampton-road, Dublin, Frederick Leopold Flood, L.R.C.P., in his 64th year.

BOOKS, ETC., RECEIVED.

CHURCHILL, J. AND A., London.
A Manual of Bacteriology, Clinical and Applied. By R. Tanner Hewlett, M.D. Pp. 808. 21*s.*

GREEN, W., AND SON, London and Edinburgh.
Encyclopædia Medica. Under the general editorship of J. W. Ballantyne, M.D. Vol. VII., Intestines to Labour. Pp. 611.

LEWIS, H. K., AND CO., London.
The Heart: Old and New Views. By H. L. Flint, M.D. Pp. xii. Pp. 177. 15*s.*
French-English Medical Dictionary. By Alfred Gordon, M.D. Pp. 161. 16*s.*

ROYAL EARLSWOOD INSTITUTION.—The seventy-fourth annual report (1921) of the Earlswood Board of Management conveys the welcome information that the residual estate of the late Mr. W. H. Ray has now been made available and £30,000 realised to extinguish bankers' loans and other outstanding liabilities. The largely enhanced current expenses still call for liberal support on the part of subscribers. The report of the medical superintendent, Dr. C. Caldecott, shows that during the year 1920 the average number of patients resident was 442, 281 males and 161 females, 47 admissions, 37 discharges, and 14 deaths being recorded; 23 were admitted by "election and part payment," 24 on "payment," and four were "aided by local committees." A few of the new cases raise hopes of improvement from training, but there is also a considerable percentage of hospital cases. Twenty-six of those discharged were reported "improved," and a youth of 21 was discharged by the Visiting Justices as "recovered." The death-rate was low—i.e., 3·16 per cent. to the average number resident. Pulmonary tuberculosis was responsible for four deaths (28·5 per cent.), and there was also a case of intestinal tuberculosis. The number of epileptics in the institution represents the percentage of 13·34 to the average number resident, and the occurrence of no less than 9197 fits was recorded during 1920, three patients, accounting between them for 3437 of the above, having died in the "status epilepticus." Considerable reorganisation seems to be in progress in the educational departments of the establishment, including special instruction of an interesting character for low-grade and infant cases; while the industrial and trade work, for which Earlswood has so long been noted, is fully maintained.

Medical Diary.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY, June 21st.—5 P.M., Croonian Lectures:—Dr. F. L. Golla: The Objective Study of Neurosis.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.

MONDAY, June 20th.—2 P.M., Dr. S. Pinchin: Medical Out-patients. Dr. Simson: Diseases of Women. Dr. Morton: X Ray Department. 2.30 P.M., Mr. Baldwin: Visit to Surgical Wards. 5 P.M., Lecture:—Mr. D. Armour: Diseases of the Gall Bladder and Ducts—Treatment.

TUESDAY, 21st.—10 A.M., Mr. Steadman: Dental Department. 11 A.M., Dr. McDougal: Electrical Department. 12 noon, Mr. T. Gray: Demonstration of Fractures. 2 P.M., Mr. Banks Davis: Diseases of the Throat, Nose and Ear. 2.30 P.M., Mr. Addison: Demonstration of Cases, Surgical Wards. 5 P.M., Lecture:—Dr. Pernet: Some Bullous Eruptions.

WEDNESDAY, 22nd.—10 A.M., Mr. MacDonald: Genito-Urinary Department. 12 noon, Mr. Sinclair: Surgical Diseases of the Abdomen. 2.30 P.M., Mr. D. Armour: Demonstration of Cases. 5 P.M., Lecture (II.):—Mr. Baldwin: Surgery of the Rectum.

THURSDAY, 23rd.—10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12 noon, Dr. S. Pinchin: Diseases of the Heart. 2 P.M., Mr. MacDonald: Surgical Out-patients. 2 P.M., Mr. B. Harman: Eye Department. 5 P.M., Special Lecture:—Dr. J. C. Bridge: General Practitioners and the Prevention of Industrial Diseases. (Open to all Medical Practitioners.)

FRIDAY, 24th.—10 A.M., Dr. G. Stewart: Neurological Demonstration. 10 A.M., Dr. Robinson: Gynæcological Operations and Visit to Wards. 2 P.M., Dr. Burnford: Medical Out-patients. 2 P.M., Dr. Pernet: Skin Department. 2.30 P.M., Dr. Pritchard: Demonstration of Cases, Medical Wards. 5 P.M., Lecture:—Mr. T. Gray: The Surgical Physiology of the Alimentary Tract.

SATURDAY, 25th.—10 A.M., Dr. A. Saunders: Medical Diseases of Children. 2 P.M., Dr. Owen: Medical Out-patients. Mr. Sinclair: Surgical Out-patients.

Daily:—10 A.M., Visit of Post-graduates to Wards. 2 P.M., In-patient, Out-patient Clinics and Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY, June 20th.—10 A.M., Mr. W. E. Tanner: Surgical Out-patients. 2 P.M., Dr. A. J. Whiting: Medical In-patients. 2.30 P.M., Mr. J. B. Banister: Gynæcological.

TUESDAY.—9.45 A.M., Lt.-Col. R. H. Elliot: Eye Operations and Cases. 2.30 P.M., Dr. J. Metcalfe: X Ray Department. 3 P.M., Lecture Demonstration:—Mr. C. H. Hayton: Cases illustrating Diseases of the Nasal Cavities and Accessory Sinuses, and their Treatment.

WEDNESDAY.—2 P.M., Mr. C. H. Hayton: Throat Operations. 2.30 P.M., Dr. W. J. Oliver: Dermatological. 3 P.M., Lecture Demonstration:—Mr. W. E. Tanner: Clinical Pathology and Differential Diagnosis of Scrotal Enlargements (II.).

THURSDAY.—2 P.M., Mr. N. Fleming: Eye Department. 2.30 P.M., Mr. J. B. Banister: Gynæcological Operations. Dr. J. Metcalfe: Radiology.

FRIDAY.—2 P.M., Dr. C. E. Sundell: Diseases of Children. 3 P.M., Lecture Demonstration:—Mr. T. H. C. Benians: Blood Examination in Diagnosis (II.). 5 P.M., Dr. Provis and Mr. Benians: Venereal Department.

SATURDAY.—10.30 A.M., Mr. W. E. Tanner: Operations. 3 P.M., Mr. H. W. Carson: Surgical In-patients.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, W.C. 1.

MEDICAL SCHOOL.

MONDAY, June 20th.—2 P.M., Dr. Hinds Howell: Out-patient Clinic. 3.30 P.M., Dr. Aldren Turner (Lecture Room): Demonstration of Cases.

TUESDAY, June 21st.—2 P.M., Dr. Grainger Stewart: Out-patient Clinic. 3.30 P.M., Dr. Risien Russell (Lecture Room): Demonstration of Cases.

THURSDAY, June 23rd.—2 P.M., Dr. Farquhar Buzzard: Out-patient Clinic. 3.30 P.M., Lecture:—Dr. Farquhar Buzzard: Poliomyelitis.

FRIDAY, June 24th.—2 P.M., Dr. Gordon Holmes: Out-patient Clinic. 3.30 P.M., Dr. Collier (Lecture Room): Demonstration of Cases.

NEUROLOGICAL OPHTHALMOLOGY.

WEDNESDAY, June 22nd.—3.30 P.M., Lecture:—Mr. Leslie Paton: Papilœdema.

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ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, Cavendish-square, W.

Post-Graduate Course on Infant and Child Welfare.

A Course of Twelve Practical Demonstrations on the Management and Feeding of Infants and Young Children by Dr. E. Pritchard to Qualified Practitioners.

TUESDAY, June 14th.—10.30 A.M., Demonstration I., Causes of Infant Mortality.

THURSDAY.—3 P.M., Demonstration II., How to Conduct an Infant Consultation, Examine an Infant and Keep Records.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), Turner-street, Mile End, E.

Courses of Lectures:—

A Course of Fourteen Lectures on Psycho-Neuroses, to be given by Dr. M. Culpin in the Clinical Theatre of the Hospital. Open to Students of the Hospital and to Members of the Profession.

TUESDAY, June 21st.—5.15 P.M., Lecture XIV.: General Review of Opinions.

Advanced Lectures in Physiology, to Students of the University and to others interested in the subject.

A Course of Eight Lectures on Reception of Sensory Stimuli, to be given by Prof. H. E. Roaf in the Physiology Theatre.

THURSDAY, June 23rd.—4.30 P.M., Lecture VII.

SURGICAL UNIT.—A Special Course of Ten Lectures on Advanced Surgery in the Unit Theatre to Post-graduates and Senior Students.

TUESDAY, June 21st.—4.15 P.M., Mr. R. Milne: Non-Tuberculous Hip Disease.

THURSDAY.—4.15 P.M., Mr. R. Milne: Endosteal Tumours of the Bones.

ST. BARTHOLOMEW'S HOSPITAL (UNIVERSITY OF LONDON), West Smithfield, E.C.

A Course of Eight Advanced Lectures in Physiology, to be given in the Physiological Laboratory, to Students of the University and others interested in the subject.

TUESDAY, June 21st.—4.30 P.M., Lecture VIII.: Dr. L. Hill: The Capillary Circulation.

A Course of Four Advanced Lectures in Medicine, to be given in the Surgical Lecture Theatre, to Students of the University and others interested in the subject.

MONDAY, June 20th.—5 P.M., Prof. F. R. Fraser: The Therapeutic Use of Digitalis (Lecture IV.).

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY, June 23rd.—4 P.M., Lecture:—Mr. T. Gray: Hare-lip and Cleft Palate.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, E.

A Course of Post-graduate Clinical Lectures and Demonstrations in the Board Room of the Hospital, free to Medical Practitioners and Students of Medicine.

TUESDAY, June 21st.—4 P.M., Dr. C. L. Hewer: Anæsthesia in Children.

THURSDAY.—4 P.M., Mr. B. W. Howell: Demonstration of Cases and Plasters.

FRIDAY.—5 P.M., Dr. C. Alice King: Clinical Manifestations of Rheumatism in Children.

TAVISTOCK CLINIC FOR FUNCTIONAL NERVE CASES, 51, Tavistock-square, W.C.

A Course of Ten Lectures on Elementary Psychotherapy, to be given by Dr. H. C. Miller, at the Kingsway Hall, Kingsway, W.C.

FRIDAY, June 24th.—5.15 P.M., Lecture VIII.: Dream Interpretation (I.): Myths, Legends, Obsessions.

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THE CREATIVE FORCE AS A FACTOR IN THE ECONOMIC PROBLEMS OF WOMEN'S WORK.

BY PROF. A. LOUISE MCILROY, D.Sc., M.D. GLASG.

NOWADAYS, when sex problems are so much a subject of discussion, we are inclined to take the view that sex is the dominant factor in almost all relationships of life. If we substitute the words "creative force" for sex, this is to a great extent true. The creative energy in the normal individual has as its main object the reproduction of the species, just as in the animal kingdom as a whole. When this creative force is not used for reproductive purposes, the question arises whether it can be employed in other directions beneficial to the community.

Sex Instinct as a Motive Force.

The world permits to men a sex instinct in the narrow sense, and condones its exercise as being the natural outlet for a physiological necessity. With women, on the other hand, it is held that sex is dormant and should only be called forth on marriage; that at the best it is an instinct which should not only be controlled, but in the minds of many prudes, even to-day, should be completely denied or hidden. Why should the maternal instinct in a mother be so lauded and the sex instinct so despised? Surely one is bound up with the other. Under modern conditions of so-called civilisation the natural outlet for sex instincts is not always to be obtained for every individual. That sex or creative energy must, therefore, be enlisted for the benefit of the community in other directions. It must be remembered that it is during the reproductive phase of life that all the greatest work of the world has been done. It is just the sex energy which has been deflected into the work which has given so much of its value.

The solution of sex problems thus lies not in the perversion of sex instincts, but in the direction of sex energy into such channels as will make it the motive power for great work of invention and research. The sexual instinct is the ultimate force which gives the energy, the keenness, the enthusiasm to all work, although the individual may be perfectly unconscious of the source of his or her activities.

Individuals suffering from neuroses or warped by unsatisfied sex instincts are as a rule leading misdirected lives. Given work to do in which they can use their creative energy, happiness and contentment is in most cases within their grasp. The physical satisfaction of sex is not an absolute physiological necessity for either men or women, but an outlet *must* be found in each individual for the creative force. In some individuals the sex instinct remains unsatisfied after mere union; in women it is often the maternal instinct which calls loudly for satisfaction. Women who dwell upon sex problems—to their own great unhappiness—are not necessarily over-sexed individuals; they are suffering from the exuberance of unemployed creative energy. The outlet to this energy may lie in original researches in art, science, or literature, or in work of the utmost value to the State. The products of such work are the children of the brain, and although sometimes the worker may long for more tangible children, on the whole she will be content.

Creative Work and Reproduction.

As a result to a great extent of the war there has been an upheaval in the world's attitude towards the more serious side of women's work, and problems which were formerly only of academic interest have now to be faced owing to the increasing numbers of women who have obtained the opportunity of engaging in work of a higher nature, entailing the expenditure of much energy in specialised directions. Women have proved that their work may equal that of men; the problem is how such work is to fit in with that of motherhood and care of a family. When we consider the training and education of girls for the higher branches of the professions we are faced with the problem of the possible influence of her activities on her reproductive functions and conversely of the possible influence of marriage and motherhood on her career.

The problem is further complicated by the fact that it is not always possible for women to marry, owing to various domestic, economic, or other circumstances, nor have they always an opportunity of doing so. Man chooses his mate; woman can only make a selection from possible candidates. In many cases, therefore, she is denied the opportunity of male companionship and the maternal joys which go to make a home, which are the highest functions a woman can fulfil, both for her own individual happiness and for the prosperity of the race. Such an ideal existence is one which is approved by the best and most intellectual women of the day, but it mostly involves the sacrifice of independence and freedom, and retirement into comparative oblivion. This retirement has many compensations, but these do not necessarily appeal to every woman, and as a consequence much of the business of the State is carried on by the large number of voluntarily unmarried women, who by their contribution of work become more or less the mothers of this State. It is these women who, for example, are in a position to come forward at the time of a national crisis and offer help. Few would object to the praise and publicity which is their reward, praise which only half makes up for the absence of home ties.

The Clash of Interests.

We cannot as yet judge of the results of the higher education of women as a whole, nor can we form opinions as to the capacity of women for special branches of work. Public opinion at present encourages men workers to marry but puts every difficulty in the way of the marriage of women workers. Some departments of the State even debar them from the continuance of their work after marriage. Celibacy, therefore, becomes voluntary for men, but for women workers in most fields it is more or less compulsory, at least so far as motherhood is concerned. One result is that among women workers who do marry the birth of children is often prevented by contraceptives, the use of which must offend at least the æsthetic sense. Existence for a woman under such conditions is an abnormal one. Apart from the temporary dislocation of interests caused by a love episode, marriage brings gain to the work of a man, unless he is hampered by family or financial worries which cannot be put down to marriage per se. Man's creative force as regards actual reproduction entails little strain upon his work; it is often a thing apart; but with woman, at the time when it is being physiologically exercised, it is more or less her whole existence. Marriage may be said from the point of view of specialised work, such as research work, to be the handicap of a woman's professional career. The care of offspring before birth and for some years after entails the expenditure of much energy. I do not for a moment suggest that because this function is being exercised all married women should be debarred from work. That is entirely a matter for the decision of the individuals concerned; and it must not be forgotten that the offspring of a mother who augments her husband's income is often better off by the increased financial advantages. It is in higher and more specialised forms of work, where the individual counts so much, that the problem is the greatest. In such work, the mere time spent at research is not sufficient in itself, but original ideas must be given out, and the creative force used almost to the uttermost in its attempts to wrest from Nature the secrets so carefully stored and hidden from us. If a woman engaged in such work endeavours at the same time to lead the life of a mother what will be the result? In her work she is placed at a disadvantage in her competition with men working in the same branch; she attempts to do the work they find all-absorbing in addition to the rearing of her family. Too great a strain is put upon her mentally and physically. Should she fail in either or both, the finger of scorn is at once raised and she is used as an example of the futility of women aspiring to do the work of men. In practice, with very few exceptions, it works out that one or other gets neglected. Even when domestic difficulties are got over, and home worries wiped out, the question whether a mother can give her whole-hearted attention to her research work still remains to be answered. If creative energy is directed or distributed in several directions, work must suffer.

No Immediate Solution.

Woman therefore must make a more or less definite choice between her heart and her head, or compromise by giving up her work while she is exercising her reproductive functions. Experience shows, however, that it is difficult to take up work again later, when fresh competitors may have entered the field. Yet it seems hardly just or fair that a certain section of research workers should take the unspoken vows of celibacy, and sacrifice themselves to a life without the companionship which is just as desirable for a woman as for a man. Are the more attractive women to remain untrained for the higher careers just because of the possibility of marriage? Should only the unattractive be chosen and urged onwards? Who is to judge which is which? There may be no solution to these problems, but we must remember that the widest sympathy and understanding is only got by knowledge, and the educated woman may become singled out all the more readily as a fitting companion by a man. No one can foresee how many members of a school or college will survive the temptations and attractions of marriage and motherhood, nor whither we are tending in these matters. We can only work blindly

on, trying to develop character by training and letting the gods decide as to the ultimate best. All women should be given an equal chance of development and culture, and their subsequent choice between careers must be an individual one. Whatever a woman's decision, the world will doubt its wisdom, and so, on occasion, will she herself. But that is no reason to deprive her of the opportunity for free choice, from which alone some measure of contentment after the conflict may be hers.

COLONIAL HEALTH REPORTS.

Gold Coast.—In a report prepared by Mr. G. C. B. Parish, Assistant Colonial Secretary, on the Blue-book for 1919, it is stated that at the census of 1911 the population of the Gold Coast and Dependencies was 1,503,386. The number of Europeans resident in the Colony during 1919 was 3182, as against 1823 in 1918, there having been an increase of nearly 200 per cent. in the mercantile community. A summary of the chief causes of death shows 22 per cent. due to the intestinal group of diseases, 12 per cent. to the pneumonia group, and 5 per cent. to tuberculosis (including phthisis), while senility and prematurity accounted for 11 per cent. each. Registration not being general all over the colony no accurate statement of infant mortality can be given, but as in Accra 28 out of every 100 deaths registered are those of infants it must be presumed that the proportion of those born in the colony who fail to reach their first birthday must be high. The death-rate amongst Europeans resident in the colony during 1919 was 8·8 per 1000, as compared with 30·7 in 1918 (the year of the influenza epidemic); the invaliding rates per 1000 for the same periods were 23·27 and 55·4 respectively. Amongst European officials in 1919 1 death was due to influenza, 1 to yellow fever, 1 to blackwater fever, 1 to liver abscess, 1 to chronic gastritis, and 1 to accident. Of the 15 deaths of European non-officials, 7 were due to blackwater fever, 1 to thermic fever, and the others to miscellaneous diseases. Seven European non-officials were invalided with blackwater fever, 1 with kala-azar, and 1 with yellow fever. Treatment was given in 3758 cases of malaria, 458 of dysentery, 9 of yellow fever, 277 of pneumonia, and 269 of tuberculosis. 16,943 successful vaccinations were performed; 14 cases of sleeping sickness were treated. Of 20 cases of blackwater fever treated, 8 proved fatal, and of 9 cases of yellow fever, 5 proved fatal. The special features of 1919 were the comparative drought and a severe epidemic of cerebro-spinal fever in the north-western extremity of the colony, 91 per cent. of the cases being fatal. The rainfall in Accra was 20 inches as compared with an average of 32 for the previous 10 years. The climate, though hot and damp, is cooler than that of most tropical countries situated in the same latitude. It is not in itself unhealthy, but an evil reputation has been earned for it in the past by the prevalence of mosquito-borne diseases, against which all possible precautions have constantly to be taken. The Gold Coast is peculiarly free from many of the discomforts associated with tropical countries: hot nights and intense heat by day are the exception rather than the rule, while insects are comparatively unobtrusive. The efforts of the sanitary and medical authorities in promoting hygiene and treatment of disease continue to exercise a beneficial effect on the general health of Europeans.

British Honduras.—Mr. Eyre Hutson, C.M.G., Governor of the Colony, reports that the estimated population in 1919 was 43,586. The birth-rate for the year was 33·979 and the death-rate 27·555 per 1000. The proportion of illegitimate births was 42·40 per cent. Rain fell on 187 days in the year in Belize and amounted to 68·93 inches. The daily average number of patients under treatment and care in Belize Hospital was 45·63, in Coroza Hospital 8·64, in Orange Walk Hospital 6·11, in Stan Creek Hospital 6·32, in Toledo Hospital 7·14, and in the Lunatic Asylum 56·15.

AN AMPHIBIOUS BOAT-TRAIN.

THE *Economic Review* for June 10th tells of experiments with a new system of waterway transport, described alternatively as the "amphibious boat" or the "amphibious train," which have been successfully carried out on the Willebroeck Canal in Belgium. The object of the system is to overcome transport difficulties on unnavigable portions of rivers, such as rapids, by rendering craft easily transferable to land while loaded and conveying them by rail until their further transport by water again becomes possible. It also contemplates the conveyance of the craft overland from one river or waterway to another. The inventor is a Belgian, Mr. Robert B. Goldschmidt, and it is hoped to make use of the system mainly in the Belgian Congo. The amphibious "boat-train" is described as a series of twin-boats or barges, the first of which is the tug, which can be driven by petroleum or palm oil. Each pair of boats is bound together laterally by a double yoke of steel, bearing a hanging device which runs on a mono-rail. The mono-rail is laid on a raised masonry or timber structure scribed so as to clear the hulls of the boats on either side. It is hoped that the boat-train will enable the great river system of the Congo, hitherto neglected, to be used regularly for transport, notwithstanding its frequent interruption by rapids.

A QUICK REPLACEMENT.

WHILST one of the members of the medical profession was attending to his duties his car was stolen. Within 48 hours of this he received a cheque from Messrs. L. A. Aldridge and Co., Ltd., of 23, Bucklersbury, E.C. 4, with whom he was insured, covering the full value of his car.

THE FREMLIN-ROGERS (STEAM) HYGIENISER.

THE Fremlin-Rogers Milk Hygieniser shown in the illustration is designed for scalding milk in large or small quantities without the risks of burning, over-heating, or loss by boiling. The milk is poured into a basin-like receptacle, passing thence in a thin layer over a heated surface, the flow being regulated by moving a pointer over a graduated scale. In this process of scalding, bacteria are destroyed, the sudden rise and fall of temperature, it

is alleged, ensuring this without damaging the nutriment or the chemical constituents of the milk, or lessening its vitamin content. The apparatus, which can be heated by gas, oil, or electricity, is made in various sizes, that depicted being a household hygieniser capable of dealing with one quart of milk in five minutes, or three gallons in an hour. It can be obtained from the proprietors, Milk Sterilisers, Ltd., 24, Buckingham Street, London, W.C. 2.

AN IMPOSTOR.

To the Editor of THE LANCET.

SIR,—I should like to warn my colleagues in London hospitals of a person who describes himself as a gentleman. He called upon me on Saturday week whilst I was engaged in the out-patient department of the hospital to which I am attached, first of all asking the hospital beadle for the name of the "officiating" doctor. He then said he was urgently in need of the doctor and was admitted. When he confronted me it was to say that he was a member of a well-known Scotch family, the MacDougall's, and that he had wired to his brother—a general in command of troops at Fermoy—for money, as he and his wife were stranded in London without a penny. Could I lend him two sovereigns till Monday morning at 11? Foolishly, I was struck by his knowledge of the MacDougall family, of whom I knew, and lent him the money. The loan has not been returned, so I wish to prevent others from being victimised.

I am, Sir, yours faithfully,

June 13th, 1921. "O. P."

THE great sale of surplus Navy and Army medical stores is continuing at the Disposal Board Depôt, Wood Lane, Shepherd's Bush, London, W.